



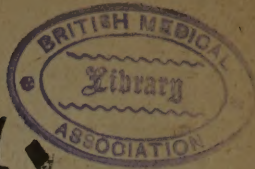


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Food & Sanitation

THE PUBLIC ANALYTICAL JOURNAL.



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Food and Sanitation.

SATURDAY, JANUARY 4TH, 1896.

FILTHY RAILWAY STATIONS, CHURCHES, AND PUBLIC BUILDINGS.

It is not very long ago that we had occasion to write of

THE ROYAL WAITING ROOMS AT PADDINGTON:

"There were two water-closets in these rooms; both fitted up with the old-fashioned D traps. The drains under the floors were defective; they were also unventilated. These rooms are closed, except when some

member of the Royal Family visits the station, which is the more dangerous, as there is opportunity for sewer gas to get into the rooms and be bottled up for the benefit of the first Royal visitor.

THE FIRST-CLASS WAITING ROOMS.

The soil pipes of the w.c.'s are carried up to the roof, but there are no air inlets. The waste pipes from the wash-basins are trapped, but all are connected with the soil pipes; none are ventilated, and so they are often unsealed and the trap rendered useless. The waste pipe from the drinking water cistern is carried direct into the soil pipe, and contaminates the water. In one of the public lavatories, the waste pipe and gutter to the gentlemen's urinal has been leaking for years, until the wall and ground underneath is saturated and black with filth. Close by on the platform are seats for the use of passengers waiting for trains, who may sit for hours over this cesspool, with their backs close to this filthy wall. Three railway stations belonging to another company are in nearly as bad a state. Five railway stations of another company are nearly as bad."

On learning this dangerous condition of things, Sir Francis Knollys at once asked the railway company for an explanation, with the result that the public can use Paddington Station without running grave risks of disease. We direct attention to this matter because we have on several occasions lately had complaints of the abominable stench to which ladies using the first-class waiting room at Ludgate Hill Station are subjected, and, failing some Royal personage offering herself as a sacrifice, it would be distinctly in the public interest if a sanitary inspector were to overhaul the place. The company's railway carriages are dirty enough in all conscience, and the Public Health Act unfortunately cannot alter that, but it can and ought to put a stop to the stinking nuisance that passes for a first-class waiting-room. We have far too little examination of churches, theatres, railway stations, etc. It is not very long since we had occasion to enter a cellar under a large church, in the neighbourhood of Paddington, and found two pipes going direct into the public sewer without the intervention of any trap whatever. The bellows for the organ was situated in this cellar, and every time the organ was played the contaminated air in this cellar was drawn up by the bellows and blown out into the body of the church. At an important junction on a south coast line the sanitary fittings in the waiting-rooms and elsewhere are of obsolete design and construction, and were found in a most foul condition.

The Thames Police-court is another case in point. Considerable inconvenience and ill-effects have, it is said, been experienced by the officials and others doing business at this court owing to the extremely damp and unhealthy condition of the present building. During the existing wet weather the walls of the building are streaming with water, while the ceilings are greatly discoloured from the same cause. Mr. Cluer, police magistrate, South-Western Court, is now a victim of typhoid from that insanitary disease trap.

The Gaiety and Lyceum theatres, whose sanitary backslidings we made public some two years ago, were in the face of that publicity, put into a good sanitary state. Sanitary inspectors would do well to give a little needed attention to the churches, theatres, railway stations, and public halls in their districts.

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THE PRESS AND LAMP ACCIDENTS.

It would be useful to know who writes the rubbish on lamp accidents in our daily papers. It is only a few days since the following appeared in the *Daily Chronicle* :—

"How many more fatal accidents are we to have before the Legislature puts a stop to the sale of dangerous lamps? Yesterday another case came before the coroner at Hampstead. A girl of eight was burned to death by the upsetting of a lamp consisting of a glass bowl and a piece of tin for a burner. The lamp cost a penny. Not a week passes without similar accidents, and the number of persons burnt to death in the course of a year is simply horrifying. There is no doubt that the Select Committee on Petroleum, which sat under Mr. Mundella in the last Parliament, will be reappointed next Session, and their report is certain to contain a recommendation for legislation. Meanwhile we can only repeat the advice that we have so frequently given. A lamp, to be safe, must have a stout metal reservoir for the oil, a pedestal that will keep it steady, and a wick tube reaching nearly to the bottom of the oil. Such lamps can be bought anywhere, and the County Council experiments have shown that they are proof against the dangers of upsetting and explosion. The flashing point of the oil has nothing whatever to do with it, as this is already regulated by law."

For unadulterated ignorance it would be hard to beat the above paragraph. We have proved times over that it is the oil and not the lamps that cause these roastings alive. Experiments were made a little over a year ago with American and other oils, when the American oils were found the most explosive examined. Some flashed as low as 69 degrees. Lighted matches thrown into various oils proved that American oil heated to 88 degrees blazed immediately, but thrown into Scotch oil the matches were extinguished. How did this happen? For the simple reason that Scotch oil is sold at no lower than the hundred degrees test. But our Government allows American oil to be sold at 73 degrees test, because Professor Abel reported that 73 degrees was safe. Let our readers remember the one fact that in Glasgow, where the oil used is mostly Scotch of a hundred degrees flash point, the fires by oil are 1·7 per cent., whilst in London, where the murderous American oil is used, fires by oil come out at over 19 per cent. We wish we could brand on the memory of every man and woman who reads this article the following remarks by an American writer, Henry D. Lloyd, in "Wealth v. Commonwealth," published by Harper Bros., New York, this year.

Mr. Lloyd says: "Out of every hundred barrels of various kinds of products from the distillation of petroleum forty are of an illuminating oil not good enough to be burned in this country (America). It must be sold in Europe, or not sold at all." It is "not good enough for America," so we allow it to pursue its devastating

course in England, causing fires, raising insurance premiums, and roasting alive hundreds of our men, women and children yearly. The Testimony Trusts Congress, 1888, pp. 818 to 873, record how the oil gang, who are hocussing the English Press on this question, bribed an employé of an oil distillery at Buffalo antagonistic to them to cause an explosion. This employé weighted down the safety valve with heavy iron and packed it with plaster of paris, and then ordered the fireman to put coal into it until the fire-box was cherry-red. When this was accomplished he went away from the works, leaving the unsuspecting victims of this infernal work to explosion and roasting alive. Fortunately, the dastardly work was not well enough done, and the safety valve lifted itself, for, despite weights and plaster, the unusual pressure blew it open, and it did not keep the gases in to explode as had been planned by the American Oil gang. For this villainy some members of the gang were put upon their trial and convicted, but they were powerful enough to bribe the law, and, although the jury on May 18, 1887, brought in a verdict of "guilty, as charged in the indictment," an accommodating judge fined the criminals *two hundred and fifty dollars each*. He got his reward later in preferment to a supreme judicial position in America. The *New York World* said of the sentence:—"It is calculated to make men, of more boldness than morals, blow up factories."

Yet, in the face of facts like these we have newspapers stuffing their readers with sorry ignorance like that in the paragraph from the *Daily Chronicle* which we quote above.

MIDDLESEX COUNTY COUNCIL AND SOMERSET HOUSE ANALYSTS.

THE Somerset House analytical curiosities must be pachydermatous by this time, or they would voluntarily abandon duties for which they are unfit. The latest expression of indignation was made by the General Purposes Committee of the Middlesex C.C. last week in a report, which was proposed for adoption by the Chairman, and dealt with the recent prosecution at Highgate of a milk vendor, named Turner. The Council's analyst certified that 8 per cent. of water had been added to the milk, and his evidence was supported by Dr. Stephenson, Dr. Dupré, and Mr. Otto Hehner. On the other hand, the analysts of Somerset House certified that the sample afforded no evidence of the presence of added water. The result was that the summons was dismissed. In consequence, the Committee adopted a resolution to the following effect:—"That the persistent difference of opinion between the highest authorities in matters of analysis and the Somerset House analysts renders it hopeless for the Council to continue to prosecute in cases of milk adulteration, and the Committee direct that the documents in the cases of dismissal be forwarded to the Local Government Board with a request that they will promote an alteration of the law, as at present the Committee is paralysed in performing an important duty, especially at the risk of being mulcted in costs." A copy of this resolution was forwarded to the Local Government Board, and the Committee hoped that some action may be taken by the Board, in order to remedy a condition of things which appears to be eminently unsatisfactory. They recommended that their action in instructing the Council's solicitor to take charge of the case against Turner be approved; and to this the Council agreed.

We commented on this case at the time it was tried, and we are gratified to know that so influential a County Council as that of Middlesex has brought it fairly before the notice of the Local Government Board. It ought to do much to confine the Somerset House pseudo analysts to gin and beer testing, and to lead to the creation of a real court of expert food analysts to deal with disputes in adulteration questions.

THE SANITARY ADMINISTRATION OF OUR PORTS.

A REPORT just issued by the Local Government Board contains much food for thought. Investigations were made by Dr. Barry into the sanitary efficiency of our ports during the cholera scare, with the result that, of the 60 ports in England and Wales, there were only 20 of which the sanitary administration, at the time of the survey, could be described as "satisfactory," "good," "efficient," or "highly efficient." The sanitary authorities who obtain the highest praise are those of the River Tyne, Hull and Goole, London, Weymouth, Plymouth, Barnstaple, Bristol, Cardiff, Swansea, and Barry and Cadoxton; while the administration of the port sanitary authority of Liverpool, which was declared in 1892 to be "most inefficient," is now classed as "satisfactory." In 21 instances the administration was classed as "fair," "moderate," or "not very satisfactory;" while in 19 it was "lax," "inefficient," "indifferent," "highly inefficient," or "bad." The last group includes the authorities of Cardigan, Chepstow, Cowes, Dartmouth and Totnes, Deal, Falmouth and Truro, Harwich, Hayle, Ipswich, Kingsbridge and Salcombe, Lancaster, Littlehampton, Newhaven, Sandwich, Teignmouth, Wells, Wisbech, Workington and Yarmouth. Since the date of inspection, however, several of these authorities are said to have "bestirred themselves," and it is suggested that, if revisited, they would probably be transferred to higher places in the classification. Great differences are pointed out with regard to the payment and conditions of employment of the medical officers of health; and Dr. Barry calls attention to the fact that many of these officers, who are receiving totally inadequate remuneration, were nevertheless found to be performing their arduous duties in a highly efficient and satisfactory manner. Dr. Thorne Thorne, in speaking of ports in which the general arrangements were in themselves satisfactory, adds that these arrangements were carried out by many of the medical officers with a devotion to duty which must be regarded as having largely contributed to the marked success with which imported cholera was controlled at nearly all English ports during the years 1892 and 1893.

THE TUBERCULOSIS QUESTION.

A FEW weeks ago we dealt with the grave need for including tuberculosis in the schedule of the Contagious Diseases (Animals) Act, and noted with satisfaction that the Scottish Metropolitan Veterinary Medical Society desired that the Royal College of Veterinary Surgeons, and the profession as a body, should bring pressure to bear on the Board of Agriculture to get the disease scheduled. Letters have been sent to kindred associations throughout the country, and in due course the circular came up for consideration at the last meeting of the Lincolnshire Veterinary Medical Society. It expressed the opinion that the rapid and alarming spread during late years of bovine tuberculosis was a source of national danger (which nobody can deny), that stringent measures should be taken to prevent its extension, and that it should be scheduled in the Contagious Diseases Act. Captain Russell, F.R.C.V.S., of Grantham, said that if they went on like this veterinary surgeons would only be required as advisers. He moved that the Board of Agriculture be solicited not to take any steps in the matter at present, and this was carried.

The grounds on which the Board is to be solicited not to take action (says our able contemporary *Farm and Home*) are at least peculiar, as, coming from members of a profession whose aim is to rival the medical profession in self-sacrifice, and who are never tired of posing as having only the welfare of the animal creation at heart. It is in striking contrast, too, to the public spirit animating the Scottish society, and apparently no more cogent reason could be found for scheduling the disease than the fact that Lincolnshire

veterinaries find it profitable. Probably they see in the suppression or reduction of tuberculosis a loss of income—since many owners are foolish enough to have "wasters" treated—and in the scheduling of this and other diseases their own ultimate extinction.

A SERIOUS ACCUSATION.

THE *Medical Press and Circular* of the 18th ult. has a letter signed "One Who Knows," saying:—

"I observe that you are righteously indignant about the smuggling by the London butchers of bad meat from one sanitary district into another in order to escape impending prosecution. What would you say if the sanitary authority itself sold the bad meat, and was encouraged to do so by both the corporate authorities and the Local Government Board? That is the state of affairs in Dublin. Where a cow is reported by its owner to the board of guardians as suffering from pleuro-pneumonia it is examined by the veterinary inspector of that authority. If he declares it to be so suffering it is at once slaughtered and a sum paid out of the union funds to the owner as compensation for his loss. Being so declared, you would naturally suppose that the carcase is at once boiled down for glue or converted into manure. Nothing of the sort. It is sold on the sly by the sanitary authority to two butchers, whose identity is kept secret. These give about 3d. per pound for the carcasses, and sell them to the middlemen butchers for about 4½d., who sell them to the unsuspecting public as 'finest Irish beef' at 9½d. You will scarcely believe that this traffic has been carried on for years with the full knowledge and secret approval of the board of guardians, the public health committee of the corporation, the veterinary department at Dublin Castle, and the Local Government Board. What do you think of that?"

We think that it cannot possibly be true, and we should like to hear from Dublin subscribers on the matter.

UNSUSPECTED POISON.

OUR disclosures two years ago that commercial glycerine had been found to contain more arsenic than was discovered in the Maybrick case, have a sinister sequel in the action tried before Mr. Justice Day at Birmingham last week. Plaintiff, Elizabeth Harrop, brought an action against Messrs. Wyleys, manufacturing chemists, Coventry and Birmingham, and James Brown, chemist, Hockley Hill, for negligently poisoning her husband. Mr. Harrop had been told by his doctor to take phenacetin for headache, and he went on the 24th of June to Brown's shop, and asked for a 10-grain dose of the drug. Brown gave him a dose of what appeared to be phenacetin, and in an hour Mr. Harrop was dead. Inquiries led to the discovery that the bottle from which Brown had taken the drug contained nearly 30 per cent. of strychnine, and that Mr. Harrop had, therefore, taken between three and four times as much of that poison as would cause death. Some time ago Brown ordered 4ozs. of phenacetin and 1oz. of strychnine from Messrs. Wyleys, and he received a 1oz. bottle containing pure phenacetin and a 4oz. bottle containing, as he found out after Mr. Harrop's death, a mixture of phenacetin and strychnine. How the poison and the drug got mixed is still a mystery. When the case for the plaintiff was concluded a settlement was arrived at, Messrs. Wyleys agreeing to pay the plaintiff £2,800, and taxed costs, Brown paying his own costs. Soon after receiving the bottles from Messrs. Wyleys it appeared that Brown had made up some of the contents of the bottle labelled "strychnine" into packets of rat poison, but he received several complaints as to the inefficacy of the poison. Four days prior to Mr. Harrop's death a lady named Banfield sent for some phenacetin powders, and he delivered her six. As he expected another order from her, he made up six more and placed them on

one side. When he found that Mr. Harrop had been poisoned it occurred to him that the drug which had proved fatal in that case was the same as that which he had supplied to Miss Banfield, and he sent his daughter to get the powders back. She obtained four, and was told that Miss Banfield had died within an hour of taking one of the others, the sixth having been opened by her medical man. The doctor, however, never suspected poisoning, because Miss Banfield had been suffering from cancer for some time, and he attributed death to that cause.

ADULTERATION PROSECUTIONS.

BUTTER.

ONE of the worst things about butter adulteration is that magistrates in the main regard it as a very trivial offence, and inflict fines that directly encourage the adulteration. There is no system, and that which secures a 5s. penalty in one town is visited with a ten or twenty pounds one in another. In hundreds of cases the penalty and costs do not repay the authorities prosecuting for their outlay in enforcing the Acts. This is a matter to which the Board of Agriculture, now that it is interesting itself in the question, should bring strongly before the Select Committee when it is re-appointed next session. How absurd the present system is the following cases show:—

At Kidderminster, on December 20, Samuel Walford and Henry Walford, grocers, of Mill-street, were charged with exposing margarine for sale without it being labelled, on the 29th ult. The Town Clerk (Mr. Morton) prosecuted—Defendants stated that the label had only been accidentally removed from the margarine a few minutes before Inspector Cowderoy entered.—The Bench fined defendants 20s. 6d. costs.

At Selly Oak, on December 20, Mrs. Parkes, of High-street, Bournbrook, was summoned for selling margarine as butter, and also exposing margarine for sale unlabelled. Defendant was fined 20s. and costs in the first case, and ordered to pay the costs in the second.

At Cheltenham, on December 24, George William Bullock was summoned for selling margarine as butter, and also exposing for sale margarine, without a label. Defendant pleaded guilty to the first charge.—P.C. Allen said he asked for a pound of fresh butter, for which he paid 1s. 4d., and which defendant's wife served to him from a dish in which there were three or four pounds. The County Analyst reported that an analysis showed that at least 8 per cent. was other than butter fat, and should, therefore, have been described as margarine.—Defendant said he had only two pounds of the butter in question, which he had bought as a sample at Gloucester. He had not seen the butter. If he had, he would not have allowed it to be sold. He had taken every precaution to prevent fraud. He had a written receipt which warranted the article as fresh butter.—Defendant was fined £1 and £1 3s. costs.—The second information, in which the defendant was charged under the Margarine Act with exposing margarine for sale, without a proper label giving a description of the article, was then heard.—P.C. Allen was again the witness. On November 26 he called at defendant's shop, and was supplied with a pound of fresh butter—or, rather, asked for a pound of fresh butter—for which he paid 1s. 4d. Defendant's wife served him from a dish which was standing opposite the counter, in full view of everyone who came into the shop. He offered to divide it before sending it to be analysed, but defendant's wife said the butter was all right, so far as she knew. The sample was handed to the County Analyst the same night. There was no label of any kind attached to the substance, nor was it wrapped in paper.—In answer to defendant, witness said he thought there was three or four pounds on the dish.—Defendant then entered the witness-box, and said his wife fetched butter from the cellar to serve the policeman, and it was not exposed for sale. The warranty was given to his wife, and was not written in his presence.—This not being evidence, and defendant's wife not being present, the case was closed, and defendant was fined £1 and costs on the second charge.

At Glasgow, on December 23, before Sheriff Fyfe, John Currie, grocer, 5, Merkland-street, Partick, was fined 5s. with £1 11s. 6d. costs, for having, on 25th November, sold to Mr. David Willock, sanitary inspector of Partick, a half-pound of margarine instead of butter.

ATKINSON WOODHOUSE, grocer, 3, Crawford-street, Partick, was charged with having exposed margarine for sale without the statutory label. Respondent said that his wife kept the shop. Mrs. Woodhouse pleaded guilty. Mr. Willock pointed out that it was a second offence. Mrs. Woodhouse said that when she was convicted three years ago she had only started the trade. On that occasion Sheriff Birnie fined her half-a-crown, the lowest possible fine. The Sheriff said that in committing a second offence she had laid herself open to a penalty of £50. Although it was a second offence he would deal leniently with her and give her another warning. The fine would be £2 2s. to cover the expenses. Such penalties are manifestly absurd, and act as incentives to adulteration.

At Ystrad Police Court, on the 23rd inst., before the Stipendiary and three local justices, Thomas Llewellyn, grocer and postmaster, Gelli Ystrad, was summoned by Mr. Superintendent Jones, D.C.C., Pontypridd, for whom W. E. R. Allen, solicitor, appeared. Mr. Llewellyn was charged under Section 6 of the Food and Drugs Act,

viz., selling butter adulterated with other fats, to the extent of 80 per cent; also boric acid added. Mr. Maelor Evans appeared for the defence, and made a most pleasing excuse to satisfy the local justices that the assistant made a mistake in placing on the counter a cask of margarine instead of butter, and that this was the only cask he ever had. This plea, however, satisfied his neighbours on the bench, and he was only fined £3, and costs £2 13s. 6d., although the inspector swore that he had previous complaints against the defendant selling margarine for butter. There was a Dr. James on the bench who might at least have been expected to know better than to acquiesce in such a decision. In other places, Wigan and Worship-street Courts, similar offences are treated with a fine of £10 and costs.

A FURTHER ascent in the scale of fines occurred at Wolverhampton, on December 20th. Before Mr. N. C. A. Neville (Stipendiary), Edwin Blakemore, grocer, 7, 8 and 9, Salop-street, and a member of the Town Council, was charged under the Food and Drugs and the Margarine Acts, on six summonses, with exposing for sale margarine without having a proper label attached in such a manner as to be clearly visible to the purchaser; with delivering the same to the purchaser without having a proper printed paper denoting its contents, and with selling butter to Mr. G. F. Allwood, the inspector, containing 6 per cent. of real butter in one case, and 20 per cent. of real butter in the other. Mr. Horatio Brevitt (Town Clerk), who prosecuted, said he was instructed by the Council in support of the informations. The six summonses appeared to have been necessary, for although the offences were committed on the same day (November 6), there were two transactions, and under the circumstances it was thought advisable to make the information in respect of each offence. Mr. Blakemore was well known as being a large grocer, who was, he believed, ex-president of the Wolverhampton Grocers' Association and a member of the Town Council. He did not mention that to be detrimental to him. The whole of the facts had been laid before the committee, without any names having been mentioned, and they were convinced of the importance of the case being laid before the magistrates. Mr. Brevitt then proceeded to state the particulars. Mr. G. F. Allwood spoke to going into the shop and seeing a slab of butter on which were three margarine heaps, marked respectively 6d., 8d. and 10d. Side by side there were other lots, presumably butter, marked 1s., 1s. 2d. and 1s. 3d. He asked the assistant, Henry Kendrick, for 1lb. of 1s. butter, which was supplied, and which on analysis was found to be genuine. The witness asked for another pound of butter from the bulk, which upon analysis contained 6 per cent. of real butter. He asked for one pound of 1s. 2d. butter, which the assistant, whilst Mr. Allwood's attention was diverted, cut from the lot marked 1s. 3d. This was refused, and a portion of the lot marked 1s. 2d. demanded, which upon analysis contained 20 per cent. of real butter. There was a support between the butters. The butters were wrapped in labels marked "Warranted pure cream butter." Mr. R. A. Willcock, who defended, stated that Mr. Blakemore had been in business since 1867, and that was the first charge made against him. So far as he was personally concerned, he had no knowledge of the transactions. The man Kendrick acted like a born lunatic. He knew Mr. Allwood was the inspector, and yet he gave him margarine, knowing it was such, and wrapped it up in butter paper. Kendrick entered the defendant's service on September 11th, 1893, when he signed an agreement whereby he contracted to sell margarine as such and wrap it up in a margarine wrapper. In consequence of his foolish action, which he admitted, he was formally discharged, but he apologised, and Mr. Blakemore kept him on, the assistant, or manager, as he really was, saying he was willing to pay fines. Mr. Blakemore summoned Kendrick for being the actual offender.—Mr. Blakemore gave evidence which bore out his solicitor's statement, to the effect that he did not know of the infringement himself, and that he took precautions to have everything as prescribed.—The manager (Henry Kendrick) went into the witness box, and said that he knew he was giving the inspector margarine. Mr. Allwood, he admitted, confused him.—The Town Clerk: You are the manager of the particular defendant, and get confused because you are asked for two separate things?—Witness: Yes; I was confused. The butter was late in coming in that morning.—That was the whole of the evidence, when Mr. Neville said he should like Mr. Willcock to suggest any "diligence" that Mr. Blakemore had shown.—Mr. Willcock referred to the contract he had mentioned, and was proceeding in defence, when the Town Clerk objected to him making another speech.—Mr. Neville failed to see the diligence. An assistant was prohibited by Act of Parliament from selling margarine as butter. The agreement provided the same thing. The cases were serious. The conduct of Kendrick, which he admitted on his oath, showed that he ought to be rather in a lunatic asylum. He knew a man was taking samples, and then to serve him with margarine and not speak about his mistake was the conduct of one who was not fitted to be outside four walls. He was not satisfied that Mr. Blakemore had shown the diligence he should. So far as his (defendant's) summonses against Kendrick were concerned, they would be dismissed. Mr. Neville inquired as to the costs.—Mr. Brevitt pressed for the fee which he, in the interests of the public, was bound to apply for.—Mr. Willcock offered resistance, but the Town Clerk said they had often had the matter discussed before.—The Stipendiary allowed Mr. Brevitt's claim to be included in the costs. Mr. Blakemore would be fined £10 and the costs for exposing margarine without a label; for selling margarine as butter, £2 and costs; and for selling margarine without a label, £1 and costs. On the second set of summonses for exposing without a label, £5 and the costs; for selling margarine as butter, £2 and the costs; and for selling the same without a label, £1 and costs. The fines amounted to £21, which, together with the costs, totalled

up altogether to £25 8s.—Kendrick was then charged with two offences in connection with the above case.—Mr. Willcock said he had already more than half his wages mortgaged, but Mr. Neville said it had nothing to do with him what arrangement had been come to between the employer and employed. He had to protect the public, and if he were to fine him £20 and costs he did not think it would be too much. As it was he would be fined £5 on each of the two summonses and costs, or in default two months' imprisonment. Total £11 15s.

PREVIOUS to this case, Emily Robinson, grocer, 11, Salop-street, was charged with selling margarine without a label attached; with selling margarine as butter, which contained 18 per cent. of real butter; and with failing to deliver the same in a proper printed paper.—Mr. Horatio Brevitt (Town Clerk) prosecuted, and Mr. Allwood spoke to purchasing the butter on November 10.—Defendant said the butter was the same as she had bought from Mr. Blakemore. She had not sold margarine in her shop for six months.—The Stipendiary said he had nothing to do with that. If she could prove that in another Court she would no doubt be able to get damages from that person for selling her margarine when she bought and paid for real butter. For exposing margarine without a label she would be fined £5 and the costs, and for failing to sell it in a proper wrapper 40s. and the costs. The other summonses were withdrawn on payment of costs. Total, £9 9s.

But Mr. Neville is well-nigh alone in inflicting reasonable penalties for adulteration offences.

At Bristol, on December 23, George Webber, grocer, Hotwells, was summoned under the Food and Drugs Act for having margarine exposed for sale which was not labelled in accordance with the Margarine Act; also with not having a packet properly labelled. Inspector Beere said he visited the defendant's shop, where he found one packet marked margarine, and another not marked. Pointing to the latter, he asked to purchase some of the butter, and was informed that it was not butter but margarine. In the other case the letters of the label were not of the regulation size. Defendant said that being busy the label had been misplaced. The Bench imposed a fine of 20s. and costs in each case.

Is there any cause for wonder that English dairy farming is depressed when every week shows this kind of encouragement to fraud in foreign butters?

MILK.

THIS article of food, so important in the light of our terrible rate of infant mortality, is tampered with everywhere. It is dosed with injurious preservatives and produced and sold under conditions that are often dangerous to health. It is only a few days since, at Thames, Charles Carter, of Charles-street, Stepney, was summoned, at the instance of the London County Council, for not giving notice of an infectious disease in his house; and, further, with selling milk before having his premises disinfected. From the statement of Mr. Collman, who prosecuted, it appeared that defendant was a registered purveyor of milk, and on 10th ult. it was found that his son Albert, aged seven, was suffering from diphtheria, and that fact was notified to Mr. Twaites, sanitary inspector for Mile End, the same day by the doctor who was called in. The child died two days later, and the place was not disinfected until the 18th. In the meantime, defendant continued to sell milk. Carter now pleaded ignorance of the County Council's regulations. Mr. Dickinson pointed out that the offence was a serious one, as contaminated milk might cause more mischief than bad water, but, under the circumstances, there would only be a penalty of 10s. and £2 2s. costs. The money was paid.

"One would have thought that," says the *Globe*, "having just had such a terrible lesson upon the deadly character of the disease, he would have taken special care not to disseminate it, and one expects a milkman to know at least so much about milk as that it is about the most effective vehicle for infection in the world. One might have supposed too, that, having seen his own child die, the thought would have crossed his mind that much of the milk he was selling would be drunk by children, and that to children diphtheria is the most fatal of all known diseases. These things even a milkman might think of, in spite of his professed ignorance of the County Council regulations. It is possible that the view which the magistrate evidently took, that he acted in genuine ignorance of the frightful danger to which he was subjecting his customers, was correct, but we are by no means persuaded that that was any justification for so light a penalty. This is one of those subjects as to which it is the plain duty of the magistrates to make ignorance so very expensive that no one shall be able to afford to remain without knowledge. The danger to the public at large is too great to permit a man to excuse himself by pleading ignorance of the law. It is the business of a milkman to know the laws relating to milk, and of any man who has infectious disease in his house to make himself acquainted with the rules prescribed in that case. If he fails to do this, so much the worse for him; his ignorance is culpable, and an aggravation of, rather than an excuse for, his offence."

But this is a view that few magistrates take, and hence milk may be impoverished or spread disease, and the penalty is generally farcical. We wonder it does not strike them that the very infants' foods their own children are fed on are made up generally with milk liable to this surreptitious drugging, watering, skimming and infection by disease. If it did we might expect a more sensible view of the question.

At Neath it is the most venial offence. On December 30, before the Mayor (Councillor Hopkin Morgan), Alderman P. Charles, Messrs.

J. Fear Davies, T. Teague, and D. T. Sims, Joseph Teague, Cimla, Neath, was fined 5s. and costs for selling adulterated milk.

At Maryport, James Hale, milk seller, Kirkborough, was charged by Inspector Simon, who stated that he purchased threepennyworth of milk and paid for it. He put the milk into three bottles, and told defendant he would send it to the county analyst. He sealed them up, and gave defendant one, kept one himself, and gave the third to Superintendent Graham, to be forwarded to the analyst the same afternoon. He purchased a sample from another milk seller the same morning, which was found to be all right. By request of the analyst, he went to defendant's place at Kirkborough to see the cows milked. He examined the tins, in which there was nothing at the time. He took another sample and sent it to the analyst.—Superintendent Graham said he received the sample of milk sent by Inspector Simon, and forwarded it to the analyst the same afternoon by registered post. He produced the certificate forwarded to him, which stated that the milk contained nothing injurious to health, but 34 per cent. of the fat originally present had been abstracted. The second sample was perfectly genuine. It was a very serious case, and if they decided to convict he hoped that they would inflict such a fine as would prove an example.—The defendant stated that the inspector got his sample when they saw only about two or three quarts left in the tin. As every milk-seller in the universe knew, milk deteriorated with the continual dipping in of the tin.—The chairman said the bench considered it a bad case, and fined the defendant £2, including costs.

At Twyford, Thomas Hodges was charged with selling milk adulterated with water. Supt. Clarke produced the certificate of the analyst, which stated that the sample of milk was adulterated to the extent of 6 per cent. of added water.—P.C. Smith proved taking the samples to Mr. W. W. Fisher, of Oxford.—Defendant said he sold milk in the morning, and not in the evening. This lot which he sold to Supt. Clarke was the first lot he had sold in the evening.—Fined £1 3s. including costs.

At Lawford's Gate, on Dec. 26, Harriet Taylor, milk vendor, of Kingswood, was summoned for selling adulterated milk. Sergeant Cooper said he purchased the milk, and an analysis by the county analyst showed that it was adulterated with water to the extent of at least 20 per cent. The defendant did not appear, but her husband, who attended, acknowledged that he had been fined for a similar offence. A penalty of £3 and costs was imposed.

At North London, on Dec. 28, a case was heard which affords an admirable illustration of Mr. Bumble's discovery that "the law is a ass." Arthur Jeffrey, milk dealer, of Green-lanes, Tottenham, was summoned, before Mr. Paul Taylor, for selling, to the prejudice of the purchaser, milk which was not of the nature, substance, and quality demanded by the purchaser, it being adulterated with 15 per cent. of added water; and James Fuller, wholesale milk dealer, of Hermitage-road, Tottenham, was also summoned for selling or delivering by contract to the said Arthur Jeffrey milk which was not of the nature, substance, and quality demanded, because it contained 15 per cent. of added water.—The prosecution was instituted by Mr. A. L. Bridge, one of the inspectors, under the Food and Drugs Act, for the Middlesex County Council, and the evidence was to the effect that on December 12 the inspector took a sample of milk from Jeffrey's premises. In consequence of what Jeffrey then said the inspector intercepted the milk as it was being delivered from Fuller, the wholesale dealer, to Jeffrey's premises the same evening, and when the samples came to be analysed it was found that both contained 15 per cent. of added water.—Mr. C. V. Young, who appeared for the wholesale dealer, at once raised the technical point that as the summons did not state that the sale was to the prejudice of the purchaser no offence was disclosed, and the summons must fail.—Mr. Bridge said that in Fuller's case he was not the purchaser. He simply took the sample at the request of Mr. Jeffrey as it was being delivered to him from Mr. Fuller's premises.—Mr. Paul Taylor asked the inspector if he could refer him to any cases in which it had been held that the words "to the prejudice of the purchaser" were not a necessary part of the summons.—Mr. Bridge mentioned the cases of "*Holt v. Morris*," "*Fitchie v. Evington*," and "*Hiatt v. Ward*," but Mr. Paul Taylor said that the inspector had misread the cases if he thought that they bore upon the point now raised.—Mr. Bridge then asked that the summons should be amended, and it was pointed out that there was a proviso in the Summary Jurisdiction Act which gave the magistrate power to overrule objections to summonses where the wording was varied, etc.—Mr. Young argued that this proviso could not apply to a summons where the offence was actually left out. The offence in this case was to sell adulterated milk to the prejudice of the purchaser. Mr. Young added that he took this objection because his client had been in business 50 years, and had never been summoned before. It was his duty, therefore, to use every means in his power to avoid a conviction. The Middlesex County Council should, with all their resources, have proper legal advice in the conduct of these cases.—Mr. Paul Taylor dismissed the summons against Fuller, and refused to grant a case for the opinion of the superior court.—The summons against Jeffrey was withdrawn on payment of costs. What with the loopholes the law affords and magistrates so glaringly unfitted to deal with adulteration prosecutions as Mr. Paul Taylor proves himself, this cruel form of infant starvation stands scant chance of being checked. It is only persistent offenders like Mr. Brown who are ever fined the full penalty.

THE SPIRITS-AT-WATER-PRICE DODGE.

At Swansea, on December 24, Daniel Evans, of the Plough and Harrow Inn, Pentre, was summoned for selling adulterated whisky.

Defendant said the whisky in question was not intended for sale, but that he used it for his own consumption as he was troubled with rheumatism. The Bench, believing there was no intention of deceiving the public, dismissed the case.

At Wolverhampton, on Dec. 27, Joseph Danks, the manager of the Bull's Head Inn, Princes End, was fined 20s. and the costs for selling adulterated whisky, to which an illegal quantity of water had been added.

At Rotherham, on Dec. 30, Robert Macbeth, landlord of the Sportsman Inn, Parkgate, was charged with selling adulterated gin. The case was proved by Mr. Wilson, West Riding Inspector of weights and measures, the analyst's certificate showing that the gin contained 1·7 per cent. more water than was allowed. Mr. Hickmott, solicitor, defended, and explained that the gin was kept in a cask near the ceiling, and the heat had caused some of the spirit to evaporate. There was no intention to defraud. The magistrate thought that the defendant had committed the offence accidentally, and fined him 20s. and costs.—George English, landlord of the Cottage of Content Inn, West Melton, was fined 40s. and costs for having sold gin with six parts too much water.

THE absurdity of the notice dodge came up at Brentford on December 21, when William Barry, of the Fox public-house, Hanwell, was summoned for having sold gin which was adulterated.—Mr. R. Cornwall defended.—William Randall, Mr. Tyler's assistant, said he purchased from Mr. Barry half-a-pint of gin, which he handed to Mr. Tyler.—Witness saw a notice hanging in the bar.—Cross-examined: He was not aware of the effect of such a notice. He knew publicans were in the habit of posting up notices. When he entered the house he did not at first observe the notice. He was not requested by Mr. Tyler not to look for a notice. He could not say whether or no there were three notices in the bar.—Mr. Cornwall: You didn't look.—Inspector Tyler said on November 20th he went to the Fox in company with the last witness. A portion of the gin was sent to the public analyst, who certified it to be forty-one degrees under proof.—By Mr. Cornwall: The notice was in a conspicuous position.—In addressing the Bench, Mr. Tyler asked if they were to accept this notice in every public-house, where would the line be drawn? In a case (which he quoted) the justices held that a notice to the effect that all spirits sold were diluted was not a sufficient protection. Forty per cent. was, in that case, considered an undue mixture. In the case before the Bench the mixture was 41 per cent. If they admitted the notice he argued that all the letters of the notice should have been larger, so as to have been more conspicuous.—Mr. Brown asked, assuming the gin was not unduly diluted, whether the notice would, in the opinion of Mr. Tyler, be a sufficient protection?—Mr. Tyler said he thought as the law stood at present it would.—Mr. Montgomery: Up to the present time every publican has considered himself sufficiently protected if he has a similar notice to the one produced.—Mr. Tyler: Yes.—Mr. Montgomery: Then it raises a most important point.—Mr. Tyler said it was the first time he had raised the objection.—The case was dismissed.—In a second case, Mr. Alfred Best, the landlord of the Magpie and Crown public-house, Brentford, was summoned for adulterating whisky.—Mr. Randall said he purchased, on November 27, half-a-pint of whisky from the defendant. He looked for a notice, but did not see one. Mr. Tyler did not instruct him which bar to enter. He looked immediately in front of him as far as he could see, but not to the right.—Mr. Cornwall: Did you enter the house for the purpose of securing a conviction.—Witness: No.—Mr. Cornwall: Then why didn't you look all round the bar. I am afraid you are not very candid.—Mr. Montgomery: It will be much better if you answer more straightforwardly; now you are fencing.—Witness then gave detailed explanation, and said from where he stood he could not see a notice.—After purchasing the whisky, Mr. Tyler said, "You have no notice."—Mrs. Best answered, "Yes; there it is."—Mr. Cornwall: Of course it was visible to you then.—Witness: After turning round.—Mr. Cornwall: You did not intend to see a notice.—Mr. Brown: When

the notice was pointed out to you, could you read it?—Witness: Not distinctly. It was dusk.—Inspector Tyler said as he stood he could not see a notice. It was simply impossible for him to do so. The notice was not in a conspicuous position, and he pointed this out to Mrs. Best. A notice should be conspicuous all over the house. The analyst certified the whisky to contain thirty per cent. of water, being ten per cent. under proof.—Mr. Cornwall said he thought there should be some instructions for publicans, so that they could know what to do.—The Chairman said in a good many instances the case was exactly like the last.—The bar was doubtless a very small one, and the Bench thought the notice ought to have been in a more conspicuous place and probably in larger type.—The case would, however, like the previous one, be dismissed.

At Dartford, on December 28, Alfred Robinson, of the Kentish Arms, Dartford, was summoned for selling brandy adulterated with added water to the amount of 36·34, being 11·34 below the legal limit; also with selling whisky adulterated to the extent of 35·02, being 10·02 below the legal limit.—On December 13, P.C. Harvey Couch purchased half-a-pint each of brandy and whisky at defendant's house.—Mr. Ridley, who defended, said his client had only been in the house a short time, and he had never been in the trade before. He broke the spirits down in accordance with the directions of the distiller, who told him to add half-a-pint of water for each quart of spirits.—Defendant, in cross-examination, admitted that he had been in the house since July, and said that for some time he sold the spirits just as they were brought in.—Defendant was fined £10 and costs on each summons, the license not being endorsed.

VINEGAR.

At Hanley, on December 23, Messrs. Boots, Limited, chemists, and Frederick Whitwell, manager of their shop at Burslem, were summoned by Mr. E. W. H. Knight, inspector under the Food and Drugs Act, for selling as white wine vinegar an article which was certified by the county analyst to be diluted with acetic acid, and not true vinegar at all. Mr. Hind, of Nottingham, appeared for the company, and Mr. F. W. Harris for Whitwell.—Mr. Hind did not dispute that the manager had sold the acid, but submitted that he had done so contrary to the instructions of the company, who had 50 or more branch shops in various parts of the country. They employed only qualified men as managers of the shops, and had given specific instructions that they were to supply customers with the articles asked for by them. In July last it came to the knowledge of Mr. Jesse Boot, managing director, that acetic acid was being sold as white wine vinegar, upon which he sent special instructions to the various managers that they were not to do anything of the kind. Under these circumstances, he contended that the company were not liable in this case.—In the course of evidence, it transpired that the defendant was not in the service of the company at the time of this instruction; and for Whitwell it was stated that he had always been led to suppose that what was known as white wine vinegar was really diluted acetic acid, upon which impression he had always acted.—The Stipendiary considered that both masters and managers were very culpable, and said he was astonished to hear Whitwell's admissions, which showed that he had knowingly perpetrated this fraud. He fined Messrs. Boots £10 and costs, and Whitwell £5 and costs.—Mr. Hind intimated that he should appeal against the decision.

PUTRID FOWLS.

At the South Western Police-court, on December 27th, Charles E. Brooke, a game dealer, trading as Messrs. Charles E. Brooke and Sons, at 39, Leadenhall-market, was summoned by the Wandsworth District Board of Works for selling one dozen fowls, the same being unfit for human food.—Mr. W. W. Young supported the summons, while Mr. Hanne defended.—The fowls were sold by defendant's salesman to a dealer named William Goodright, at 6d. a piece, it being the intention of the latter to sell them again at a profit. When he arrived at Balham market-place, he noticed that the fowls were in



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a putrid state. He then took them to the Sanitary Inspector of the Board, and they were subsequently condemned by order of the magistrate.—Mr. Lane, Q.C., referring to the money paid for the fowls, said they must have been very lively.—Mr. Young: They were not chickens.—Assistant Gaoler Nolan, who was present when the fowls were condemned, stated that they were putrid and stinking.—Mr. Hanne called the salesman, who said he had one out of the same basket for breakfast, and it was all right. There were some people who like "this class of stuff." (Laughter.) People who were fond of high game.—Mr. Lane: They were high fowls?—Yes (renewed laughter).—The witness added that the fowls were sent up from Lincolnshire to be sold on commission. He fixed the prices and sold the stuff, and in this branch of the business his employer took no part.—Mr. Young maintained that an employer was answerable for the acts of his servants.—Mr. Lane adjourned the summonses to consider the legal aspect of the case.

DRUGS.—EXTRAORDINARY ACTION OF MANUFACTURERS.

At the Mold Petty Sessions, on December 30, Richard George Williams, The Stores, Tryddyn, was charged with an offence under the Food and Drugs Act. Mr. J. B. Marston prosecuted on behalf of the police. Superintendent J. Ivor Davies stated that on Thursday, the 28th November last, he called at the defendant's shop, and asked the defendant if he sold sweet spirits of nitre. Defendant said "Yes," and witness was supplied with four ounces, for which he paid 1s., and told the defendant that the article was for analysis by the public analyst. He then divided it into three parts, and sealed it up, leaving one part with the defendant, and retaining the other two parts. Defendant said, "All right, I know all about it. With every quantity I sell I give one of these labels (handing one to witness). These will protect me if it is not right. I sell it as I get it from the firm, and they supply me with the labels." The label was read and ran thus:—"Sweet Spirits of Nitre. This is a preparation, and not the spirits of nitrous ether of the British Pharmacopœia. Not full alcoholic strength." The Chairman (to defendant): Who supplies these labels? Defendant: I get them from the firm, sir.—Messrs. Bell, Sons, and Co., Liverpool, and they ought to be liable.—Mr. Marston: Mr. Williams supplies it as he gets it from the firm of manufacturers; but still he is liable.—The Chairman: These labels are worthless.—Mr. W. F. Lowe, county analyst, said he received one of the samples from Superintendent Davies on the 3rd inst. It only contained 1-25th of the minimum of active principle ordered by the British Pharmacopœia, and it contained 23 per cent. of water. It was a worthless drug.—Defendant, in reply, said he had nothing to say. He had always sold the article ever since he had been in business.—At this point the defendant handed in a letter from Messrs. Bell, Sons, and Co., which the Chairman read.—The Chairman: It is evident that the firm are conversant with this.—Mr. Marston: Yes, sir; they are perfectly cognisant.—The Chairman: They give instructions to the defendant how to act. Defendant was perfectly right to write to them. These labels are absolutely worthless; but, so far as we are concerned, we have to administer the law for the benefit of the public. We shall have to fine you, Mr. Williams, and you will have to pay the costs. You are liable to a fine of £20, but we believe you have not done this thing wilfully, and we, therefore, have decided to inflict a fine of 10s. and 19s. 6d. costs.

COFFEE.

At Eastbourne, on December 23, Robert Slight, grocer, 457, Seaside, was summoned for serving as coffee a concoction which

was adulterated with 30 per cent. of chicory on November 27.—The Town Clerk (Mr. Fovargue) prosecuted.—Joseph Barrow, clerk in the office of the Medical Officer of Health, said he went to the defendant's shop and asked for a quarter of a pound of coffee. A young woman served him from a tin, the quantity being weighed up in his presence, and he paid 5d. for it. Mr. Humphery, inspector of nuisances, came up to him as he was leaving the premises, and, having taken the coffee from him, he went back to the counter with it.—Inspector Humphery said when he returned to the counter the young woman called the defendant, who said if witness had wanted the coffee for analysis he should have said so, and the proper article would then have been supplied to him.—The Analyst's certificate was here put in, and showed that the coffee was adulterated with not less than 30 per cent. of chicory.—The witness, continuing his evidence, said chicory cost about a third of pure coffee. The price he paid was a good one for pure coffee.—The defendant said it was all a mistake. In his absence the young woman served Barrow with a mixture and charged him for half instead of a quarter of a pound.—The Bench convicted the defendant, and ordered him to pay a fine of 25s. including costs. The Chairman strongly condemned the conduct of the defendant, and warned him that in any future case he would be severely punished.

ALLSPICE.

At Wolverhampton, Frederick Wood, grocer and provision dealer, 85, Worcester-street, was charged with selling allspice not of the nature and substance demanded. Mr. Allwood (Food and Drugs Inspector) prosecuted, and Mr. T. Dallow defended.—Defendant was asked for allspice, and sold a substance which contained 60 per cent. of ground maize.—The defence was that the spice was sold as "pudding spice," and was in the same condition as defendant had bought it.—Mr. Neville said that the grocer who did not know what allspice was, after being in the trade as long as defendant had been, had either been very badly taught or was a stupid man. Defendant was fined 5s. and costs.

THE BOARD OF AGRICULTURE ON ADULTERATED FOREIGN BUTTER.

The Board of Agriculture have, for some time past, been taking, through the instrumentality of the Customs officers, samples of the butter imported into this country. These, having been taken under the provisions of the Customs Acts, have been analysed by the principal chemists of the Government laboratory. The Board commenced taking the samples in June and July, but the number of cases in which the Government chemists found that fats other than butter fat were present was comparatively small; they only found that there had been adulteration in ten cases out of 284 samples taken and analysed. In consequence no action was taken for a few weeks; but in the five or six weeks which elapsed from September 21 to the end of October the Board took 146 samples of imported butter, and found that in no less than 50 instances the analysis disclosed the presence of fats other than butter fat. Germany bore the "distinction" of being the worst offender: the largest proportion of adulterated samples was in German butters. But a large proportion of adulteration was found in samples from Holland. Immediately the Board discovered that there was adulteration they addressed a communication to the importers or to the consignees, telling them in each case that the Government chemists had found adulteration, and warning them that butter which contained an admixture of foreign fat must be sold as margarine under the provisions of the Margarine Act. The circulars sent out were addressed to the importers or consignees only

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THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

After eight months' investigation in the Public Health Laboratory of the University of Edinburgh to estimate the value, in prevention of disease, of the best known Carbon and Asbestos Filters, of the Pasteur Filter, and of a copy of it in another material, Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., states:—"The Pasteur-Chamberland Filter is undoubtedly the best, and the only one in which reliance can be placed for permanently sterilizing drinking water."

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in cases where they were receiving butter which had been found to be adulterated. In November, the Board took and analysed 145 samples, and there again the highest proportion of adulteration was in butter from Germany. But a comparatively large proportion of adulteration was traced in the case of Holland, and a smaller proportion in the cases of Denmark and Russia respectively. The results so far as the colonies and the United States were concerned were highly satisfactory; there was no adulteration. In all the cases where they find adulteration the Board issued a letter to the importers or consignees in the terms mentioned, and insisted that the substance should be sold as margarine. Each letter had reference to particular samples or consignments. Since September they have analysed altogether 291 samples, and in 79 cases out of this number adulteration has been found. Each of the consignees or importers in the 79 cases, therefore, would have received a letter informing them of the sophistication. In the case of Holland, they have analysed 67 samples in all, and 46 out of that number have, it is said, been found to be adulterated. The Board are asked by the Netherlands Chamber of Commerce to believe that the Government chemists have made a mistake in all these forty-six cases referring to Dutch butter. Professor Thorpe, as head of the department, has made every allowance that can be suggested, and he can only certify that the butter was adulterated. The analyses were based upon a series of tests which were mutually corroborative. Representations have been made by the Netherlands Chamber of Commerce that the Government chemists are wrong, and that the results of their analyses are perfectly consistent with pure butter of very low quality. It is represented that butter of a higher standard cannot be produced in Holland during the period from September to December; they contend that at this time of the year the quality cannot possibly be improved. All their representations have been considered, and the whole matter is now under review. The Government analysts have taken into consideration all the representations that have been made on behalf of the Dutch exporters and producers, and they see no reason to modify the verdict which they have already pronounced. They have found adulteration in the case of a certain number of Danish samples, but, curiously enough, have not found any adulteration present since they resumed the examinations in September last in the case of butters from Norway and Sweden. If it is simply a question of climatic conditions and the season of the year there seems to them to be no particular reason why there should be that distinction. At the same time, they have not analysed so many samples in the case of Sweden as in the case of Denmark. The object of the Board of Agriculture in obtaining these analyses was to satisfy the home producer, who has for some time past considered himself handicapped by the competition of adulterated foreign butters, and the object of the Board was to ascertain to what extent the complaint was well founded. It is now proposed to bring the whole matter forward, and the Board of Agriculture has obtained some exceedingly valuable evidence on the subject, which will be brought under the notice of the Select Committee of the House of Commons on the Adulteration of Food Products, upon its reappointment, which

is likely to take place when Parliament reassembles. In June and July it did not appear that there were any grounds for the complaint, but the recent analyses show different results, and would seem to suggest that the statements made, that the "adulteration" varied according to the season of the year, were really sound. There appears to be more "adulteration" in autumn and winter than in spring and summer. Of course, they have been factory butters in many cases, and that fact has been taken into consideration by the analysts. A great deal of "averaging" takes place, of course, in factory butters, and allowance has been made accordingly. There may be plenty of butter fat from one cow, while in the case of the yield of another cow the proportion of butter fats may be abnormally low; but so far as factory butter is concerned, it should be of uniform quality—individual characteristics would not have the same play.

The President of the Board of Agriculture, speaking at the farmers' dinner a fortnight ago, said:—

"There is little doubt that the Select Committee of Adulterations will be reappointed next session, and there will then probably be brought before it the evidence which has accumulated on this butter question."

It is to be hoped that the Committee will recommend a strengthening of the law with regard to adulteration, for it is well known to be miserably deficient and inefficient. So far as the butter and kindred trades are concerned, it might be best to place more responsibility on the importer, as we cannot punish the exporter with fine or imprisonment. We congratulate the Department on this step towards stopping a fraud which affects directly the British farmer and the public generally, and we trust Parliament will promptly give both imperial and local authorities more power to protect us from foreign fraud.

CORRESPONDENCE.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—My attention has been directed to a paragraph in which you state that none of the Irish Members have co-operated with Mr. Plunket's endeavours. May I point out that Mr. J. Redmond, M.P., and myself have joined the Recess Committee. Long before this idea was started I have advocated the formation of a commercial party in the House, recruited from all political sections. At my suggestion the Irish Cattle Traders and Stock Breeders' Association initiated a movement for a Veterinary College for Ireland—now established. They also started the agitation for a Board of Agriculture, anent which I have written a pamphlet. Progress and development are looked after by Irish M.P.'s.

With best wishes,

Blackrock, Dec. 26, 1895.

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Food and Sanitation.

SATURDAY, JANUARY 11TH, 1896.

THE TRUTH ABOUT LAMP EXPLOSIONS.

If we did not believe that our newspapers are above suspicion of being "squared," we might suspect that the American Oil gang are using the same methods in this country that they employed in the United States, where we have proofs of jury, judge, and newspaper bribery, of explosions planned and carried out upon

trade competitors' premises, and of the depths of every possible degree of rascality being plumbed by these saintly millionaires. We are convinced, therefore, that our press is being hocused, or used against its knowledge, for the purpose of continuing one monopoly in England, and creating another, which, if it can be successfully done, will realise enormous fortunes for those engaged in the scheme. Some two years ago, a person of the same name as an official holding an important public position on the London County Council, patented what is claimed to be a safety lamp. Now, we do not know if Mr. Alfred Spencer, who is head of the public control department of the London County Council, is this same patentee; but Mr. Spencer has been very active for a year or two in demonstrating that the bulk of the lamps sold to the public are unsafe. Says *The Grocer*:—"Lamp accidents were responsible for about one-seventh of the fires in London last year, the number so caused being 427, of which 90 were actual explosions. In addition to these, small fires, causing less than £5 worth of damage, reported to insurance companies, but not to the Fire Brigade, exceed in number all the rest. Mr. Alfred Spencer has been carrying out elaborate experiments concerning safe and dangerous oil lamps. The operations were conducted in a structure fitted up to represent a dwelling-room, containing, among other things, a full-sized effigy of a woman, with the usual amount of inflammable drapery. Lighted mineral oil lamps were here subjected to various practical tests, such as they might be expected to undergo in real life. They were upset, they were dropped, they were flung at the unconscious figure in the corner, and in other ways put on their trial to ascertain the degree in which they possessed the element of safety. The result was that several contrivances claiming to be considered as 'safety' lamps were proved to be by no means deserving of that title. Protected by the presence of a member of the Fire Brigade on either side of him, provided with sacks and fire-extinguishing apparatus, Mr. Spencer produced, by means of some lamps of the 'safety' class, as many as eight fires in one afternoon."

The *Lancet* has also been conducting a series of experiments upon dangerous lamps, but whether Mr. Spencer made these or not is not stated. The tests applied were much the same as those adopted by the London County Council, at the request of the Special Committee on Petroleum—i.e., sending a draught down the chimney and upsetting a lamp. The lamps were bought in several of the poorer quarters of London, and were such as are commonly in use amongst the inhabitants. Twenty-two lamps, drawings of which are given, were tested, with the following result:—Six were found very dangerous, nine dangerous, five of uncertain safety, and two probably safe. *The Lancet* concludes that at present at least 70 per cent., and probably more, of the lamps sold in London are liable to add fresh disasters to the already long list. The same verdict, we imagine, applies to other places. The oil, says *The Lancet*, used was found to be safe enough, and *The Lancet* is satisfied with the precautions enforced by law under this head. The conclusion arrived at is that there must be legislation for the prevention of the sale of dangerous lamps, and *The Lancet* suggests that all lamps offered for sale should be stamped by a Government department.

It is obvious enough that if the Select Committee to be appointed next session were to recommend a short Act preventing the sale of lamps that did not meet

certain requirements, or, indeed, if they only went the length of recommending a lamp constructed on certain principles, the persons holding a patent for such a lamp would rapidly reap a fortune, and the makers of the cheap lamps, thus condemned by the *Lancet* and Mr. Spencer's experiments, would find themselves "cornered." Dr. Jameson and the Chartered Company have shown us to what lengths speculators are prepared to go to secure profits, and upon this question of explosions by mineral oils it is time our daily papers, lamp manufacturers, and the public seriously studied the subject. On Saturday last no fewer than five cases of death resulting from paraffin explosions and playing with fire were notified to the London coroners. During last week upwards of a dozen deaths occurred from this same cause.

On January 6, Mary Ferguson, a woman seventy years of age, was discovered burned to death at 22, St. James'-place, S.W. The room and its contents had been much damaged by fire, which had evidently burnt itself out. There were the remains of a mineral oil lamp on the floor, by the side of the body, and it is supposed that the accidental upsetting of the lamp had caused the outbreak.

Sufficient horrors, truly, for one week! Now, there is not an honest scientific investigator, who has studied this question, who does not know that every one of these fires and deaths are due to the Abel flash point of 73 deg., which allows the refuse American oils to be sold here—rubbish, be it borne in mind, that the United States laws do not permit to be sold in America. Meetings of branches of the Society of Chemical Industry in our principal cities have condemned the Abel 73 deg. flash point, and expressed the belief that nothing lower than 100 degrees was safe, and in several American States the flash point is even higher than 100 deg., going in some instances to from 105 deg. to 120 deg. When it is borne in mind that the temperature of living rooms is often enough higher than 73 deg., the criminal folly of this Government permit to sell these American oils that give off inflammable gas at 73 deg., and often, as has been found, as low as 69 deg., is conclusively shown, yet we have the *Lancet* making the statement that the oil used was safe enough, leaving us to infer that there is no blame attachable to the American oils. The question arises, were the *Lancet's* experiments made with the two classes of oil—the American that flashes at 73 deg., and Scotch oils that flash at 100 deg.? If our contemporary asserts that the 73 deg. American oils are safe, it asserts that which is not true. If there were an atom of truth in the statement, why should our Government insist upon using for our Navy oil 105 deg. flash point, and why will it not allow any lower than 145 deg. flash point oil for use in our lighthouses? That Professor Abel says 73 deg. is safe carries no weight with us, for we have not forgotten *The Pall Mall Gazette* and cordite, nor *The Imperial Institute*. The Society of Chemical Industry is much more capable of expressing an opinion of value upon this question, and as far back as December, 1892, it condemned the 73 deg. flash point. The Glasgow Chamber of Commerce, on May 14, 1894, decided to petition the Government to raise the flash point to 100 deg. The Manchester and Edinburgh Chambers of Commerce also took similar steps. On June 20, 1894, the leading insurance companies of Edinburgh and Glasgow made experiments with American, Russian, and Scotch oils.

American oil was found to flash as low as 69 deg., and when heated to 88 deg. this oil blazed instantaneously on a lighted match being thrown into it; whilst the same experiments made with Scotch oil resulted in the light being extinguished.

We are not pleading for the sale of dangerous lamps, but for a right understanding of the truth upon this grave question, and for tardy justice to a native

industry which, if it had fair play, would yield employment to some thousands of persons in the United Kingdom. This industry is well-nigh squelched, and 19 per cent. of our fires in London and some 300 people are roasted to death every year, and all this to benefit the American oil gang, whom American juries have brought in guilty of conspiracy to secure explosions, and whom Congress committees have revealed as the most unscrupulous scoundrels known to commercial life. We, at least, will be no party to hocussing the public or the House of Commons Committee into giving a longer lease of life to their game in England; and some, at least, of our English newspapers may not consider it a crime to say the truth when the truth is only justice to a native industry, and would lead to the prevention of this fearful daily roasting alive of our people.

RADAM'S MICROBE KILLER.

THIS nostrum, with its scores of testimonials from people as gullible as those who lauded Harness's belts, or the Ammoniaphone which was to make us vocally all nightingales, was some few years ago composed of pure water charged with the gases generated from the following ingredients:—Flowers of sulphur, nitrate of sodium, black oxide of manganese, sandalwood and chlorate of potash. In 1889, Dr. Eccles published an analysis of this preparation, upon which he based the following formula:—

Oil of vitriol (impure)	-	-	4 drams.
Muriatic acid (impure)	-	-	1 dram.
Red wine, about	-	-	1 ounce.
Well or spring water	-	-	1 gallon.

It is high time we had a law dealing with so-called patent medicines.

POISONOUS EFFECTS OF BORAX.

THE extensive use of compounds containing borax, which under various names are sold for preserving foods, lends a special interest to some observations of Doctor Ch. Féré, of Paris, who has used the drug in the treatment of intractable cases of epilepsy, and with some success. For this purpose it was necessary to give large doses for long periods, but in the course of the trial he met with a considerable number of persons who were peculiarly susceptible to the remedy.—Loss of appetite was succeeded by burning pain in the pit of the stomach, dryness of the mouth, and eventually by nausea and vomiting. Borax produces also a remarkable dryness of the skin, which is found to favour, if not to cause, various skin diseases, especially eczema; the hair also becomes dry, and may fall out, causing complete baldness. The most dangerous property of biborate of soda, however, is its power of producing kidney disease, or of converting a slight disorder of the kidneys into a fatal malady.—*British Medical Journal*.

THE MARGARINE ACT.—I.

A WRITER in the *Newcastle Chronicle*, discussing the steps taken by the Board of Agriculture in consequence of our exposures of adulteration in imported butters, gives a total of £12,933,135 as being paid for butter during 11 months of 1895. He says:—"This shows the immensity of our foreign and colonial trade in butters, and how important it is both to consumers and to our dairy farmers it should be kept free from adulteration and conducted on honest lines. It is to be hoped, however, that we shall hear less in the future about the greater excellence of foreign butters as compared with English. There are many persons who have for a long time believed that the greater uniformity of these imported butters is due more to sophistication than to any legitimate art in the dairy itself. It is only a few weeks since a capital authority showed us that the dairies and their products abroad were no better than those of this country, and many of them not so good, but that there was a much more complete commercial organisation for purchasing butter, mixing it, and putting it up for our markets. This investigation by the Board of Agriculture takes us a step further, and shows us that much of the uniformity of

foreign butter is due to the sophistication of which so many of us had a very keen suspicion. The two facts together show that clearly it has not been a fair and honest competition that our farmers have had to contend against.

Leaving out our Colonies, who have not, as far as our knowledge goes made adulteration a fine art, every practical man knows that nearly the whole of this butter is more or less adulterated. The foreign dealer is well aware that if he puts in no more than ten or fifteen per cent. of margarine he is safe, because no analyst could depose with certainty to adulteration in the case of such a percentage. A fair calculation of the amount the public are defrauded of yearly by butter adulteration in home and imported butters, would show about one million sterling per year. This adulteration is rarely organised by the retailer. A number of large wholesale houses and stores have Bradford's and other firms' butter blenders at work, and it is often what they add to the already adulterated imported Danish, Dutch, German, and other butters, that gets the retailer into trouble. But whether the margarine be added in England or not, there is one precaution the retailer should always take—he should buy no butter without a warranty, and if a prosecution with fine and costs happens to him, he should sue the wholesale dealer for damages. The wholesale dealer has his remedy, for he can deduct the sum from the account of the foreigner from whom he purchased the article."

Such being the case we do not understand the cause of the following decision by Mr. Haden Corser:—At Worship-street, on January 6, Henry Doons, Baker's-row, Whitechapel, was summoned for selling as butter an article adulterated with 46 per cent. of foreign fat.—The defendant pleaded that he sold the article as delivered to him, and that it was represented as "pure Dutch" butter.—Mr. Beck, solicitor, said he attended to watch the case for the consignees, Messrs. Bone, of Whitechapel. The "butter" was invoiced to the latter as "pure" by Messrs. Simonsz, of Harlingen, Holland, but the certificate of the public analyst showed that 46 per cent. of the stuff was fat which was not butter fat. The defendant had had an analysis made of a part, and there the percentage was reduced to 20.—Mr. Corser said that a portion had also been sent to Somerset House, and the analyst's return was 20 per cent. Mr. Beck said his clients, Messrs. Bone, were satisfied that the defendant had sold the article without tampering with it. One analysis they had made returned the article as quite pure.—Mr. Corser said that analysts, like doctors, appeared to differ. He ordered Doons to pay 12s. 6d. costs.

It seems to us that London magistrates are annoyed at having to hear adulteration cases, for in many cases their decisions are evidently given with the object of discouraging prosecutions. Mr. Bros, at North London, on January 2, heard two summonses taken out at the instance of the Butter Association, which has been established to protect the interest of producers of and dealers in pure butter. Mr. Ricketts, solicitor, prosecuted.—The defendants were Mr. John G. James, cheesemonger, of Mare-street, Hackney, and Mr. Matthew W. Shaw, cheesemonger, of Victoria Park-road. Moore, Burgess and Collins, inspectors to the association, deposed to the facts, which were identical in both cases. A half-pound of tenpenny butter was asked for, and in each case it was served from an unlabelled parcel, and delivered to the purchaser in an ordinary butter wrapper. When analysed it was found that Mr. James's sample contained only 12 per cent., and Mr. Shaw's sample 31 per cent. of actual butter—the rest being fat, foreign to butter.—Mr. Ricketts said this was clearly margarine, and as such it should have been labelled when exposed for sale, and delivered to the purchaser in a wrapper stamped "margarine" in printed letters not less than a quarter of an inch square.—In Mr. James's case the defence was that the parcel was labelled, but that the label had fallen down; further, that the inspector was told that he could not expect pure butter for 10d. a pound. The inspector replied that in November, when this purchase was made, plenty of pure butter was being sold at 10d. a pound.—Mr. Bros fined the defendant 6d., with 12s. costs. Mr. Shaw's defence was that the piece of margarine had been left by accident on the butter block, and the "bacon hand" had served it, not knowing that it was margarine. The defendant added that he had been in business in this shop 28 years, and had never been summoned.—He was ordered to pay 12s. 6d. costs.

At Brentford, last week, Edward M. Hope, The Broadway, Ealing, was summoned for selling butter adulterated to the extent of 70 per cent. with foreign fats.—Inspector Tyler said that on December 9, his assistant purchased half a pound of what he supposed was pure butter, and paid 6d. for it. On being submitted to an analyst the article was found to be adulterated with 70 per cent. of foreign fats, and was, in fact, margarine.—Defendant said his shop was entirely in the hands of a manager, who had strict injunctions not to buy margarine at all. Witness had no knowledge of the margarine being on the premises, and he had never known it to be sold in his shop before. He had had the shop for over 25 years, and had never been summoned for a similar offence.—Fined 40s.

At Malvern, on Jan. 1, a grocer named Taylor, having branch businesses at Worcester, Pershore, and Malvern Link, was charged with a breach of the Food and Drugs Act, and also with a breach of the Margarine Act of 1887, on Nov. 23, at Malvern Link, by selling margarine for butter, and by having about 7lb. of it in his shop not labelled "margarine," as the Act requires.—About six months ago he was fined £5 for a breach of the Margarine Act at Pershore.—The Bench inflicted a fine of £10 for each of the above offences, and costs amounting to £1 12s.

At Wigan, on Jan. 2, Peter Gore, a grocer, of Wallgate, was summoned for refusing to serve Inspector Sumner, official for the Food and Drugs Act. He had also on a plate margarine without the

required label.—Mr. Wilson, who defended, said the defendant admitted that by an oversight it was not labelled.—A fine of £5 was inflicted.—Patrick Whitney, of 49, Darlington-street, was summoned for selling margarine as butter. The article was found to be 93 per cent. of fat other than butter.—Defendant said he did not profit by the transaction, as Irish butter was the same price as the article he sold to the woman.—A fine of £10 was inflicted.

THE PURE MILK QUESTION.

In New York, it is calculated that the use of milk containing the bacteria that produces consumption is responsible for five thousand cases in that city every year. This is especially important in the case of children and invalids, as they have not the physical vigour to overcome the effects of impurities in diseased milk. We can only surmise how much consumption is caused by such milk in England, but the information we already possess on the question shows how urgent is the need for more stringent regulations and rigorous inspection of milk.

Some weeks ago, we pointed out the dangers attending the use of infant's foods that require to be made up with cow's milk, inasmuch as such milk may be infected, and is too often dosed with injurious drugs. Dr. Sidney Davies reports an epidemic of enteric fever at Plumstead, twenty-five cases being notified in one week, and all but one of them were traced to one dairy. About two hundred houses in Plumstead had this infected milk, and from May to July there were in all 177 cases of disease, over 90 per cent. of which were traced to the infected milk. There were 23 deaths caused by this epidemic of milk typhoid. The moral is obvious, sterilisation or filtration of milk through a "Pasteur" filter should be everywhere adopted, and infants should be fed wherever possible from the breast; and if that be not possible only those artificial foods should be used that do not require to be made up with milk. We are regularly confronted with cases where dairies thus spread disease in some part of the country, and if we could get figures showing the loss to the community caused by inefficient sanitary supervision, we would find it profit us well to increase our very inadequate staff of sanitary inspectors, of which there is scarce a district has a sufficient number. Outside of this question of infected milk, we have the loss to the public by milk swindles. Our contemporary, *London*, following some calculations we made some years ago, said in its last issue:—

"The population of England and Wales consume on an average a third of a pint of milk per head per day, or 15 gallons a year. A little calculation will show that the total annual consumption is 1,740,000,000 quarts and the amount paid for it at a moderate charge is £29,000,000.

"How much of this milk consists of added water? The report of the Local Government Board shows that among the few samples taken for analysis 13·3 per cent. is adulterated. At least 12 per cent. of this officially discovered adulteration consists of added water, which means that the people buy 20,880,000 quarts of water for milk during the year, and pay £348 000 for it. That is supposing samples are taken all over the country, but they are not. In 26 counties and 50 boroughs, with a total population of over 6,000,000, no samples are taken at all, so that £50,000 must be added to the payment for water. In many other districts the samples analysed are too few to be representative. A low estimate will, therefore, give half-a-million pounds a year as the price which people pay for water in milk.

The law is not sufficiently stringent to discourage this system of dishonest dealing. In districts where it is thought to be well enforced milkshops are not visited more than once every three months for samples. A milkman who only does a small business will make £10 a quarter by adulterating with water. If he is caught at the end of the quarter he has only to pay a fine of about £2, and has, therefore, £8 profit.

"There is a dairyman in London who has paid more than £300 in fines for selling water, and is still flourishing."

We would rather see some of this half a million sterling spent on public health work than know that it is filched from the consumers at the expense of much infant starvation, but, important as the question is, the interest taken in it is of the most perfunctory kind. In every part of the kingdom magistrates vie with each other in encouraging the wrong doing by inflicting absurdly inadequate penalties.

At Lisburn last week, Acting-Sergeant Carson summoned Robert Abbott, of Stoneyford, for selling buttermilk adulterated with a large percentage of water.—A fine of 10s. and costs was imposed.

At Southampton, Georgina Smith, of St. Mary's-road, was summoned for a breach of the Food and Drugs Act. It appeared from the evidence adduced that an inspector went into the shop of the defendant and purchased a pint of milk. An analysis proved that 48 parts of fat out of every 100 had been extracted from it. It had been sold for new milk.—Mr. Smith, who appeared on behalf of his daughter, admitted that owing to a mistake during his absence his daughter had gone to the dairy and brought out skim milk instead of fresh. He had been in the business for 22 years, and had never previously had anything brought against him.—A fine of 10s. and costs was inflicted. Frank Ashley, of St. Mary's-road, was similarly charged. In this case the Town Clerk said that the analysis showed that the milk contained 7 per cent. of

added water. Frederick Horace Hudson, inspector under the Act, having given evidence, the defendant was fined 5s. and costs.

At the Mansion House, on December 31, Frank Walter Bartlett was summoned, under the Adulteration of Food and Drugs Act, for selling milk adulterated with water.—Mr. Vickery prosecuted on behalf of the Commissioners of Sewers, and stated that the defendant, trading as the Cream Dairy Company, had shops in different parts of London, and among them one in the Bull's Head-passage, Leadenhall Market, where, on December 6, an Inspector under the Food and Drugs Act, named May, purchased a pint of milk, which afterwards was found to be adulterated with 77 per cent. of added water.—Defendant said the milk was sold in exactly the same condition as it was received, and with each churn of milk there was a signed note, which he and others regarded as a warranty that the milk was unadulterated. Besides this, they had a signed contract with the farmers to supply pure milk. No one was more surprised than he was when he received the summons.—The Lord Mayor imposed a fine of 40s. and 2s. costs.—The defendant inquired if he had any remedy against the farmer, and was recommended to consult his solicitor.

THE Dartford Magistrates show a juster appreciation of the gravity of milk adulteration.

Mrs. Ann Toon, dairy-woman, of Northumberland-heath, answered to three summonses, for separate offences on the same day.

Inspector Chaney said that on December 2nd he came across defendant's daughter selling milk, and he asked her for a pint of pure new milk, for which he paid 2d. He told her the sample was for analysis, and divided it in the usual way. The analyst's certificate showed that the sample contained 11 per cent. of added water, and, besides that, the milk had been deprived of nine per cent. of its cream. There was a separate summons in regard to the latter. The same day, in Erith, he saw defendant's cart in charge of a boy, and he bought from him two samples, from different cans. One sample turned out correct, but the other was certified to contain 10 per cent. of added water.

Mr. Ridley, for the defence, said he should adduce evidence that this milk was sold as it came from the cow. His client had no separator on the premises, and denied taking away any cream. As to the samples purchased at Erith, he was instructed that the inspector had mixed his client's samples with those purchased from some other person, named Hearsfield.

The Chairman asked if the sample from Hearsfield was correct?

Inspector: No.

The Chairman said in that case he could not see how any such alleged mistake could benefit Toon.

The defendant, her son, and daughter were called to say that the milk had not been tampered with, and a boy named Patrick, in charge of the cart at Erith, said he thought the inspector mixed up the samples.

The Bench imposed a fine of £10 and costs, in the first case, and £1 and costs in each of the others.

Mr. William Hearsfield, of 47, West-street, Erith, was summoned for selling adulterated milk.

Inspector Chaney said that on December 2nd, he met defendant's boy selling milk, near the police-station, Erith, and was supplied, on request, with a pint of new milk. He had since forwarded a sample for analysis, and the certificate, produced, showed that it contained 8 per cent. of added water.

Defendant, who did not appear, was fined £5 and costs.

A SANITARY OBJECT-LESSON.

WITH the increasing demands of healthy public opinion for the removal of insanitary areas, for more sanitary inspectors, and for fixture of tenure in the appointment of inspectors, we have a corresponding activity on the part of owners of slum property and their friends or nominees to become members of town councils and vestries. They do not attack those responsible for sanitary progress in an open manner, for that would defeat their purpose, but they pretend, as was the case recently at Islington, to be alarmed at the cost to the ratepayers of what they term sanitary fads. The public too often ignore or forget the immense monetary benefit obtained by the diminished sickness and death that is everywhere noticeable along with increased sanitary work. If we take Leeds as a case in point, we find that in 1864 to 1869 the death-rate averaged 28.9 of the population. In 1894, as we gather from the admirable report of Dr. Spottiswoode Cameron, the death-rate was reduced to 17.9. This is not an ideal death-rate, but it proves one thing very clearly—that no public money is more wisely expended than that devoted to public health work. Dr. Spottiswoode Cameron points out the close connection between this diminished death-rate and the clearance of unhealthy areas, and urges a point to which too little attention is given in our large manufacturing towns.

He says:—

"Unhealthy areas.—There are, however, other causes at work which, unless dealt with from time to time, tend to diminish the rate of decrease in the mortality of our town. First of all it has to be remembered that though a great improvement followed the demolition of the insanitary dwellings in the early seventies, and though the reduced death rate following after the clearance has been maintained, and the reduction even slightly increased, there still remain in the city vast numbers of dwellings very little better than those which were then removed. During the whole of this time building has been going on around, thus shutting out the free

access of air from districts, which, although undesirable as places of residence, were less so when they stood nearer the open country than they do to-day. The deterioration, due to time, of these old and often overcrowded buildings themselves, has also to be kept in mind, and this notwithstanding that considerable outlay has ever and anon been insisted upon in order to remove the grosser class of nuisances. It is not merely the dilapidation of the buildings due to time that is here referred to. Emanations from their occupants, never thoroughly oxidized, owing to want of air, are continually being absorbed into their porous walls, and in many cases nothing short of the demolition of the buildings can be regarded as a rational remedy."

We have learnt the value of open spaces in London, but in manufacturing towns an open space is looked upon as a wasted one, and manufacturers itch to erect hideous buildings upon it that so block the light of each other that much of the work has to be done by artificial light. The hygienic value of light and air are either unknown or despised, and every open space is regarded merely from the point of view of how many looms, or streets of back-to-back houses, could be put upon it. The working classes think too little of these questions; they do not reflect that the manufacturer himself is not immured the whole day in a factory where health giving light and air can scarce penetrate, and that he does not live in one of the insanitary areas, but has his residence in the favoured parts of Apperley, Rawdon, and like pleasant places. They do not weigh the fact that such a decrease in the death rate as that from 28.9 to 17.9 means that many thousands of bread winners are given longer life and opportunity to provide for their little ones, that others are saved from sickness, misery, and want, and that a more robust and healthy race of men and women are being produced, giving the lie direct to rubbish about degeneracy. Degeneracy has no chance where there is sanitary progress, and whenever the cry is raised against increased expenditure on sanitary work object lessons such as this decreased death rate in Leeds should not be forgotten.

One paragraph in Dr. Cameron's report upon *insanitary workshops* shows that Leeds has yet plenty of sanitary work to do.—"Next in importance to the removal of insanitary dwellings, and the admission of air and light to houses placed amidst insanitary surroundings, comes, in my opinion, the sanitation of the workshop. In an industrial town like Leeds there can be very little doubt that the places where so large a proportion of the population work during the day must be as strictly attended to in regard to sanitation as the dwellings in which they sleep at night. Some little has already been done in this direction, and if this work be pressed forward we have a right to expect that it will assist gradually but largely in improving the health of the community."

We like to come across a medical officer of health's report that is purposeful, and deals with more than mere figures, and Leeds is to be congratulated on having a sanitary staff that can show such good results. The public opinion of the City should encourage the good work.

What insanitary areas mean to the public came out strikingly in an enquiry just held by the Local Government Board at Birkenhead. Dr. Sydney Marsden, the energetic medical officer, had reported in May last upon some insanitary areas.

At the enquiry he stated that nothing short of demolition would meet the needs of the case. The death-rate over that area was 60.3 per 1,000, against 19.8 for the whole borough. He did not think there was any need to provide new houses, as there were a large number vacant quite close at hand. In answer to several questions, he said the death-rate in the houses facing Tunnel-road had been 120.8 per 1,000 for the last ten years. Truly about as terrible a sanitary object lesson as could be placed before the public.

A BOARD OF AGRICULTURE FOR IRELAND.

MR. WM. FIELD, M.P., for St. Patrick's, Dublin, makes an eloquent plea, in a pamphlet just issued, for a Board of Agriculture for Ireland. Mr. Field says:—

"The production and population of Ireland is decreasing; everything grows less except the area of uncultivated land, the growth of taxation, and the spread of poverty. This most unfortunate condition of affairs needs a co-operative effort from those who may agree to differ upon other subjects, but should come together for the common good. *The ruin of our neighbour is frequently the prelude of approaching disaster to ourselves.*"

The events of the past two weeks show the wisdom of Mr. Field's words. With a less able and clear-headed statesman than Mr. Chamberlain, we might have been at war, with the hand of nearly every European nation against us. We have crammed our Court and given public offices, with high salaries, to starveling German princes, thrusting better English men aside, and we have seen gratitude and reward in the unwarranted message sent by the German Emperor to President Kruger. It is questionable if at any time we possess within our shores a ten weeks' food supply, so much do we rely upon foreigners for well-nigh everything we eat and drink, and it is certain that even a partial blockade of our ports, which would present no great difficulty to one or two of the great European powers, would bring famine to hundreds of thousands, if not to millions of our people. Are we showing prudence in neglecting agriculture in England and Ireland? To our thinking we are not, and it would profit us far more to spend money resolved on for the Uganda Railway in establishing a Board of Agriculture in Ireland and devote a few more millions to light railways, fisheries,

creamery developments, and agricultural teaching in that country and in this. As Mr. Field points out, "Ireland is one of the most fertile countries," and its condition and that of a large part of Germany were very similar fifty years ago. save that the soil of Ireland was far superior. "Except in the Rhine provinces the soil was poor, the climate not unlike our own, but largely by a process of State interference Germany has been led to prosperity from the borderland of ruin. Since 1815 the country was divided into from twenty to thirty independent States. There is scarcely a system of State aid which has not been tried out to its fullest extent in some one of them. As a result of the similarity of language there was intimate communication, and a process of the survival of the fittest has been in operation among the various experimental systems of State aid to agriculture and native industries. The Agricultural Departments may be said to have had their origin in Germany, and from the first the support and encouragement of the 'petite' culture was their particular office. It would be, therefore, altogether unfortunate if on setting up an Agricultural Board for Ireland it would select for its model the English Board of Agriculture. To avoid such a disaster as this the direct simple method must be adopted of placing the Department or Board under the control, for some years at least, of a Director or Secretary for Agriculture brought from one of the Home Rule Governments of Germany. Irishmen are quite equal to Germans in ability; but in directing State aid to agriculture and the development of industries, we have not the experience or the knowledge which the peculiar condition of Germany and the extreme system of local government have worked out there successfully.

"That agriculture would be enormously improved by an efficient Board, the example of the German Agricultural Departments places beyond a doubt. It is now more than 40 years since the first experimental station was established in Germany. The success of the system has been so great that it has extended to most other countries in Europe, and in the United States of America there is an Agricultural Department formed on strictly German lines, having 55 stations in the Union."

The wise and encouraging words of Lord Londonderry, a few days ago, afford much ground for hope that something will be done to develop Ireland's industrial resources. There is far greater wisdom in creating a prosperous and contented Ireland than in pouring English money into the lap of America, Germany or Holland, and leaving English and Irish agriculture impoverished and discontented. Other nations are not so careless about fostering native industries.

The French Chamber of Deputies recently discussed the military budget, and decided that, except under unusual circumstances, no more tinned meats are to be supplied to the French army after January 1, 1897, except such as are manufactured in France or in the French colonies.

WATER AT SPIRIT PRICES.

THERE is no adulteration so profitable as this, but the fines are in most cases an encouragement instead of a deterrent.

For selling gin containing six per cent. excess water, Jonathan Walton, Black Horse, Gate Helmsley, was summoned by Police-Inspector Newstead. The defendant said he could not account for the weakness of the gin, and he was fined 5s. and costs.

At Ilminster, on January 3, William Sparkes, of the Eagle Tavern, Buckland St. Mary, was summoned by P.C. Hill, stationed at Tatworth, for selling adulterated whisky.—Supt. Rawlings produced a certificate received from the county analyst, to whom a portion of the spirit was sent, showing the whisky was 28.5 per cent. under proof, whereas 25 per cent. was the amount of dilution allowed.—Defendant admitted the offence, and suggested the spirit had depreciated by evaporation. He had had it a long time.—Fined 5s. inclusive.

At Cheltenham, Thos. Cresswell, of the Shutter Inn, Gotherington, was summoned for selling whisky more than 25 degrees under proof.—P.C. Allen, stationed at Gloucester, deposed that on December 9 he called at the Shutter Inn, Gotherington, kept by defendant. He saw defendant's wife in the bar, and asked for a pint of Irish whisky, for which he paid 2s. 4d. He divided the liquor into three parts, one of which defendant's wife kept, the constable another, and the third part was delivered to the county analyst. He had received the analyst's certificate that the sample was 29.66 degrees under proof, instead of 25 degrees as required by the Act.—Defendant said he had mislaid his reducing rule, and had gone into Cheltenham to get another on the day the constable visited his house. He was unaware that the whisky, which he had diluted himself, was under proof.—Defendant was fined £1 and costs £1 1s. 3d.

At Bootle on December 31, William Dryden Dickens, the American Hotel, Regent-road, Bootle, was fined 40s. and costs for selling a pint of whisky which, when submitted to the public analyst, was found to be 28½ per cent. under proof, or 3½ per cent. below the Excise standard.

At Mortlake, Mary Ann Harris Llewellyn, 3. Castlenau-villas, Barnes, was summoned for selling whisky adulterated with water.—Defendant denied the offence.—Thornton Grierson, assistant inspector of weights and measures, said on December 11 he went to defendant's house, the Red Lion, Barnes, and purchased half a pint of Irish whisky, for which he paid 1s. 4d. Witness then handed it to Mr. Houghton inside the house. Witness took a portion of it to the public analyst.—Robert Alfred Houghton gave corroborative evidence, and produced the analyst's certificate, which showed the spirit to be adulterated.—Defendant said she had been in the trade twenty-eight years, and had never had a like

summons, and, during her occupation of the Red Lion, four samples had been taken.—Fined 40s. and costs, and analyst's fee. It is not to be expected that fines like these will have any effect in putting a stop to the sale of water at spirit prices.

DRUG ADULTERATION.

At Mold, on December 30, Mr. Richard George Williams, of the Stores, Tryddyn, was charged by Superintendent Davies, with selling him four ounces of sweet spirits of nitre which were proved to be adulterated.—Mr. Marston appeared for the police, and stated the case, adding that the defendant supplied three labels, on which were printed "Sweet spirits of nitre," but not the article as described by the Pharmacopœia. The sale took place on November 28, and Mr. Marston said the law was that all drugs supplied must be according to the Pharmacopœia.—Mr. Davies then related what occurred, adding that Mr. Williams told him the article was not of the recognised strength. It was sent to Mr. Lowe, the analyst, who certified it was only twenty-five per cent. of the required strength, there being only a trace of the article represented.—Mr. Marston added that undoubtedly Mr. Williams sold the ingredient as supplied to him, which, in the opinion of the analyst, was worthless.—Mr. Williams relied on the label, but the Chairman said it would make no difference, as it had been decided the drug must contain the required strength, about two or three per cent. of nitrous ingredient, as shown in the Pharmacopœia.—The Chairman said the defendant had rendered himself liable to a heavy fine, but they would let him off with one of 10s. and 19s. 6d. costs, which, in the opinion of the Bench, those who sold him the drug ought to pay. The labels were worthless.

LINSEED MEAL ADULTERATION.

At Belfast, on December 31, David M'Master, inspector under the Food and Drugs Act, summoned Samuel M'Dowell, druggist, 209, Shankhill-road, for having, as alleged, sold linseed meal adulterated with 25 per cent. of farinaceous matter. Mr. A. J. Lewis prosecuted, and Mr. D. M'Gonigal defended.—For the defence it was argued that when the inspector got the meal he was told that it was crushed cake linseed.—The magistrates imposed a fine of 20s. and costs.—Mr. M'Gonigal stated that some thousand tons of the meal was scattered throughout the city in different establishments, and that as those cases might be of some importance to the trade, he would ask that the fine in the matter in which he was concerned be raised to 21s. to enable them to appeal.—Their worships granted his request.—A similar charge was preferred against Samuel Suffern, druggist, 328, Shankhill-road, by the same complainant.—The defence was to the effect that the inspector was pointed out the words on the packet which he bought, "Linseed cake meal."—A fine of 20s. and costs was imposed.

POINTS.

SERIOUS DISAGREEMENT IN THE OIL TRADE.

THE Standard Oil Company of America has declined to fulfil its engagement to take up a quantity of paraffin scale which could not be otherwise disposed of from one of the Scottish oil companies. The reason given for this breach of agreement is that the candle-makers' combination has broken down in consequence of under-selling by Scotch makers, and on this account the Standard Oil Company is no longer in a position to maintain prices. It is feared that this action on the part of the Standard Oil Company will terminate the agreement between Scotch and American producers. The result of this can scarcely fail to be a renewal of keen competition, cutting of prices, and consequent depreciation of the oil companies' shares.—*Chemical Trade Journal*.

OPIUM IN COUGH MIXTURES.

As a warning to all who are too ready to prescribe opiates in cough-mixtures, it should be noted that there are 1,500,000 individuals in the United States addicted to the habitual use of opium, and that many of these "opiophagists" date their habit from the use of cough-mixtures.—*Journal de Médecine*.

A POTENT GERMAN REMEDY.

A SOMEWHAT pretentious paper, emanating from the pen of a Hanoverian physician, appeared in a recent number of the *Deutsche Medicinische Wochenschrift*, lauding a certain German preparation of iron and manganese; the caption is "A Contribution to Iron Therapy and Researches into the Blood (Blutuntersuchung)." It has an appearance of learning, bristles with impressive citations, and last, but not least, presents an array of imposing percentages. From some of the latter the readers of *The Medical Age* can extract a little amusement.

Par exemple: The author declares the chief value of the product is "unquestionably based on its content of the inorganic constituents of the blood, since to introduce these into the economy along with the food is more difficult than to provide access for an augmented ration

of albumen." He also cites Biernacki as asserting "anæmia is due to poverty of the blood in inorganic constituents."

But what is this startling array of blood-salts, found in this preparation? To our surprise, it is designated as 0.016 gramme in a single dose—a tablespoonful—or, in other words, *one tenth of one per cent.* Of this amount, 75 per cent.—we employ the author's own figures—or 0.012 gramme, is alkaline earth phosphates; twenty per cent., or 0.0012 gramme, alkali phosphates; five per cent., or 0.0008 gramme, alkaline chlorides!

When it is realised that this *wonderful* per centage of phosphates is exceeded by the proportion of blood-salts present and available in drinking-waters and in the commonest food, it becomes a natural query: What is the value of such a preparation, especially as this is the point insisted upon as the chief basis for therapeutic value? According to the evidence presented by the author, the most common dietary would be the best possible therapeutic reliance, and one beside which the new medicament would be cast into obscurity. To be sure, in order to commend the product and make an imposing showing, it has received the high-sounding baptismal title of "Normal Saccharated Solution of Iron Manganese" but big words "butter no parsnips."—*Medical Age*.

ANTIDOTE TO CARBOLIC ACID.

DOCTOR EDMUND CARLETON—who is corroborated by Dr. C. S. Kinney, of the Insane Hospital at Middletown, Connecticut—declares the antidote to carbolic acid is to be had in every well-ordered household, and is nothing more than simple cider vinegar. Knowledge of its specific worth came by accident. One day, while making some experiments with the pure acid, an unlucky movement sent two ounces of it into his hand, and though in two seconds he had the hand under a stream of water and washed it well, it became white and numb. There seemed to be no escape from the usual result—desquamation, and slow recovery of the sense of touch. But the odour was persistent and unpleasant, and, in the belief that it might be changed, a servant was sent for a cup of cider vinegar. While bathing and rubbing the affected parts with vinegar, to the amazement of Dr. Carleton there was complete restoration of colour and function. In five minutes nothing remained in evidence except the modified odour. Dealing from analogy, the inference is drawn that the acetic acid of the shops will prove equally satisfactory. Also attention is drawn to the fact that the bleaching and anæsthesia arising from carbolic acid closely simulate leprosy.—*Medical Age*.

INFANT FEEDING AND STERILISED MILK.

SIR,—Since you published an article on infant feeding by my father, Sir William Priestley, a number of inquiries are constantly being addressed to him, and as he has left London for some weeks, perhaps you will allow me to supplement his article by giving a few more details.

Sterilised milk has been used in this country for some time past, and is nothing new, but no medical man, as far as I am aware, advocates the use of undiluted sterilised milk. This is the secret of the success of Drs. Budin and Chavane at the Charité Hospital in Paris. These doctors always encourage the mothers to nurse their infants, and the infants are weighed every day for the first ten days, the weights being recorded on charts. Directly the progress of the infant is not considered sufficient, the maternal supply is supplemented by undiluted sterilised milk.

Dr. Budin considers that a healthy baby should require from 500 to 600 grammes of human milk during the twenty-four hours from the fifth day to the end of the first month; during the second and third months the amount required is from 600 to 700 grammes per diem (Tarnier).

If the mother is secreting the normal amount of milk, the infant's chart will show a satisfactory weight curve; but if the progress of the infant is below normal, the mother's milk must be supplemented according to the estimated deficiency; 50 grammes of sterilised milk should be given during the twenty-four hours in cases of slight deficiency up to 250 grammes where the deficiency is estimated at one-half.

When the mother is quite unable to give any nourishment at all, the infant should be given the full equivalent—namely, nearly 500 grammes (about 16 ounces)—of undiluted sterilised cow's milk, say, eight bottles in the twenty-four hours, each containing two ounces.

The reason why medical men do not prescribe pure cow's milk is that the curd is indigestible, and is only slightly less so in boiled milk. The curd of sterilised milk is free from this objection. "Avec ce lait stérilisé, dit M. Chavane, le caillot n'offre au doigt qui le presse aucune résistance, aucune sensation d'élasticité. Il se laisse pénétrer comme un liquide épais, de la crème, par exemple." Also microscopic examination shows that there is no change in the fat globules, and that the granules of casein are finer and more homogeneous. Dr. Budin maintains that not only is sterilised milk free from germs, but that it is more digestible than any other food except mother's milk, and he finds his results vitiated directly there is any dilution of the milk properly prepared.—I am, etc., R. C. PRIESTLEY, M.B.

Linden Gardens, W., Dec. 26, 1895.

SALICYLIC ACID IN BRITISH WINE.

MR. DE RUTZEN gave a decision, on January 6, that we cannot help regarding as dangerous from a public health point of view. It related to a case against Walton, Hassell, and Port, grocers, with numerous establishments, for selling orange wine containing salicylic acid. The

proceedings were instituted by the parish of St. George's, Hanover-square, under the 6th section of the Food and Drugs Act. Mr. A. Gill prosecuted, and Mr. Rose Innes defended. The wine sold admittedly contained '038 per cent. of the acid, or equivalent to 26.6 grains per gallon. The public analyst, Mr. Cassall, and Dr. W. H. Corfield deposed that the acid, even in the quantity used, was injurious to health. For the defence a large number of expert witnesses were called, who regarded salicylic acid as a most useful preservative, and as being, in the quantity employed, perfectly harmless. Mr. de Rutzen, in the course of a long judgment, said he had no hesitation in dismissing the summons, on the ground that the case came within the Act, that the drug was not (in the quantity used) injurious to health, and had not been added to the wine to increase its bulk or conceal its inferior quality, but solely for antiseptic purposes. Mr. A. Gill said the vestry could not appeal, because his worship had decided on the question of facts.

We have on several occasions dealt somewhat fully with this question, and it is much to be regretted that anyone claiming to occupy an important position in the scientific world should give evidence in favour of what is utterly indefensible, surreptitious drugging by vendors of food or drink. In the case of salicylic, even this drug is adulterated, inasmuch as there is pure and impure salicylic. The impure salicylic contains a poison, para-oxy-benzoic-acid.

It says little for our knowledge or regard for the public weal in the United Kingdom that we are even behind the pettifogging South American Republics on this question. On the Continent the use of salicylic in food or drink has long been prohibited.

The Department of Agriculture of Pennsylvania has recently decided that the use of preservative agents composed of boracic acid, salicylic acid, etc., is injurious to public health, and that these substances therefore come under the provisions of the Pure Food Act of that State. Persons using or selling articles of food or drink containing them are liable to conviction and fine.

Mr. Storrs, Michigan, in a report just made to that State, says:—"The substances most commonly employed as preservatives are salicylic and benzoic acid and their derivatives. There can be no doubt but that the use of either of these acids if taken in food once or twice daily in sufficient quantity to produce their medicinal effect, would in time produce serious disturbance even in a healthy person. The ordinary medicinal dose of salicylic acid is from 10 to 60 grains. The United States Dispensatory, in speaking of its properties, says:—'When salicylic acid is given to man, in doses just sufficient to manifest its presence, symptoms closely resembling those of cinchonism result. These are fulness of the head, with roaring and buzzing in the ears.'

"In regard to its use as an antiseptic in food it says:—'A commission appointed by the French Government reported that the prolonged use, even of very small amounts of salicylic acid, is dangerous, especially to very aged persons.'

"It is well known, that the antiseptic property of these drugs is dependent upon their power to destroy the micro-organisms which produce fermentation or decay in perishable goods. Is there any reason to suppose that they suddenly lose this property when taken into the stomach? Digestion has been proven to be a fermentive process. Why, then, should not a drug which prevents fermentation outside the body, retard fermentation in the stomach?"

As to the dosage, and the allegation that it is harmless in the quantity discovered in the wine in question, there was no evidence to show whether the salicylic itself was pure or impure, and when we remember that meat, fish, milk, bacon, and nearly every article of food we eat or drink is dosed with some one of these antiseptic drugs, it is readily seen how dangerous a decision is this of Mr. Rutzen's, for, although the amount present in any given article may not be large, the entire quantity taken with each article may be very harmful indeed. We believe it is, and that dyspepsia and other disorders are largely due to this surreptitious drugging. The administration of powerful drugs by any persons, other than those qualified for the practice of medicine, is a serious evil which should speedily be coped with by legislation.

CONSUMPTION IN COWS.

In a report presented by the Provincial Board of Health of Ontario it is concluded that where the udder of a cow is affected the bacilli of tuberculosis are always present, and that although there may be no tubercle in the udder yet the milk may, in a considerable percentage of cases, contain bacilli. This is a matter of vital importance to the public at large, and it suggests that the consumer of milk, wherever he may be, may at any time take the germs of the disease which we know as consumption into his system. Boiling, therefore, should be invariably insisted upon. Where, however, a person is healthy, the mucous membrane offers great resistance to any possible attack on the part of the germs. Professor James Law, an Englishman, who holds the highest position as a veterinarian in America, states that in infected herds in New York, consisting largely of mature cows, he has found a maximum of 98 per cent., and a minimum of 5 per cent, diseased, whereas in the country districts he has found hundreds of cows in adjoining herds with not a trace of the disease. Town-produced milk is more commonly affected in America, as well as with us, and as the tubercle bacillus or germ is destroyed by heating milk up to the scalding point for ten minutes, or, indeed, at a little below that point, 158 deg. Fahr., for the same period, there should be no neglect of this precaution. The disease is encouraged by darkened cattle-houses, bad feeding, imperfect ventilation, and predisposition, which may

be inherited. Professor Law says that milk is to be more dreaded than meat, inasmuch as the udder is often the seat of the disease, while milk is consumed uncooked, and meat is not. His opinions are confirmed by some of the first experts in the world. He quotes a case in which, in his own experience, three calves born of healthy parents contracted the disease by taking milk from the apparently healthy udders of three cows which were affected with general tuberculosis. He insists upon the fearful risk which is being run by the human race in consuming the milk and meat of infected animals. Half measures are useless and, generally speaking, it is of no avail to expect precautions to be adopted by farm servants, who do not appreciate the high importance of the matter unless they constantly act under personal supervision.

DISEASED MEAT REVELATIONS.

ARE we ever going to see magistrates inflict the proper punishment for this offence? In the following case it was the third offence during one year, yet it is punished by a fine.

In Aberdeen, on Dec. 26, Baillies Edwards and Young on the bench—Charles Edwards, Prince Regent-street, partner of the firm of Charles Edwards and Company, provision curers, was charged with having, on 14th ult., in premises in Guild-street, occupied by the Caledonian Railway Co., had in his custody 489 lb. tins of preserved tongue intended for human food, but which had been seized and found to be unfit for such, and had been ordered to be destroyed.—Accused pleaded guilty.—The Procurator Fiscal explained that the tins had been sent to a firm in Glasgow, who rejected them on discovering the state they were in. They immediately wrote to the accused's firm and asked them to take the goods back, as they were not only unsaleable, but unfit for human food. The goods were then forwarded to Aberdeen, with the result that the local firm declined to take them back, and allowed them to lie for a considerable time at the station. There was no misnomer in saying they were seized. The firm declined to have anything to do with the tins, and they were allowed to lie there. Referring to the manufacture of tinned meat, Mr. Lamb said the tongues were cured in a marvellously short time and put into tins, and when they were tinned it was a very difficult matter to detect whether there was anything wrong with them or not. This was the third time the firm had done this thing this year.—Mr. Wilson said their honours were not to suppose that the lesson given by the last conviction had been without its effect.—Baillie Edwards said this was a very gross case, involving danger to the lives of the people.—A fine of £10, with 18s. 6d. expenses, was imposed, with the alternative of ten days' imprisonment.

At Thames Police Court on Jan. 2, Messrs. John, Alexander, and Albert Edward Munro, potted meat manufacturers, of Ocean-street, Stepney, appeared to answer an adjourned summons for having in their possession tinned goods unfit for human consumption.—Mr. Muir, instructed by Mr. Milner Jutsum, prosecuted on behalf of the Mile-End Vestry; and Mr. G. H. Young defended.

The evidence of Dr. Thomas Taylor, medical officer of health for Mile-End, showed that when he visited defendants' premises on July 17, he saw a number of tins of meat opened, some of which were unfit for food. The doctor asked what was done with the bad tins of meat, and one of the defendants said, "We return them to where they were bought, and get good ones given in return." The witness seized all he found bad, and they were afterwards condemned and destroyed. These comprised twenty-seven tins of corned beef, eighty-four tins of cooked meat, and nineteen tins of salmon and lobster. One of the defendants, on being asked what the meat was used for, replied, "Various kinds of potted meat. It is ground up and put in small tins. The tins are then soldered down and subjected to heat, and afterwards pricked to allow gas to escape, and then re-soldered." Dr. Taylor asked what was done with some red herrings which he saw, and the reply was, "They are ground up and mixed with margarine and made into bloater paste." On the occasion of other visits the witness seized tins of beef, rabbit, and soups, all of which were bad. Altogether sixty-one tins of soup, twelve tins of beef (each containing 6lb.), and some tins of rabbit were seized. When he visited the premises on Oct. 10, the defendant John was asked if he had any meat for him to see that day. The defendant replied, "No; only the bloater paste which you see we are making up." On making an examination, a number of tins of bad meat were seized. Some cases containing small tins of potted meats were also seized, and these the defendant Alexander admitted were all unsound, adding that they were returns. One case contained nine dozen, and the other six dozen of potted meats. On one label were the words, "Palmer's brand. Potted tongue. A delicious relish." The other was "Ham and tongue." All were unfit for human food. In July 129 tins were condemned. The corned beef tins had a fetid smell, and were mouldy, while several tins of meat were almost black. The 84 tins of bloater paste or meat—it was difficult to say which—were more or less fluid, and stunk very badly. The 12 tins of salmon seized on the same occasion had a greenish tinge and were almost black in colour. The smell was very offensive, and the same remarks applied to the seven tins of lobster. The 61 tins of soup seized on October 3 were in a stinking condition; the tins of beef were in the same condition as those seized in July. The 40 tins of corned beef seized on October 10 were in the same condition, and the assorted meats were in a semi-fluid condition, and stinking.

By Mr. Young: On July 9 he was not aware the business was carried on by D. Munro, Sons and Co. On the occasion of his first visit, the 84 tins of potted meat were by themselves, and he was told they were bad. He did not apply for a summons against

anyone in respect of that seizure, but he was perfectly satisfied that at least one of the tins would have been used for human food. There was not half a million tins of meat on the premises when he made his visits.

Mr. F. H. Lyon, sanitary inspector, also gave evidence.

Mr. Dickinson further adjourned the case.

These revelations conclusively show the need for special sanitary inspectors being appointed to visit regularly all premises upon which sausages, bloater-paste, etc., are prepared. The present happy-go-lucky system is bad for the public, and for the first-class firms who are careful to can only wholesome food and whose business suffers from practices that are so disgusting that it is hard to imagine human beings engaged in them.

It is nauseating to think of such abominations being sold to and consumed by the unsuspecting public.

They manage these matters at least better in France. A butcher at Rennes was the contractor for meat to the Seventh Artillery Regiment, and sent in among his delivery the carcass of a tuberculous cow. He has been ordered to purge himself of his offence by undergoing a year's imprisonment and paying a fine of 100 francs. Moreover, the court has ordered that his sentence shall be read in every market place, so that the unfortunate man's business will, in all probability, be irremediably ruined.

THE LOCAL GOVERNMENT BOARD INSPECTORSHIPS.

ATTACHED to the Local Government Board are engineering inspectors, medical inspectors, general inspectors, and a variety of others. Medical and engineering inspectors we know something of, and we cannot say that the appointments made by the Local Government Board have always commanded our admiration and approval. Speaking of appointments, however, a recent achievement in this line tempts us to ask what, in the name of goodness, are the duties and qualifications of general inspectors. It would seem that, like the inspectors themselves, the duties and qualifications are best described as "general." Are they susceptible of definition; and, if so, have they ever been defined by the Local Government Board? The president has just appointed Colonel Preston, the chairman of the Lindsey (Lincs.) County Council, a general inspector, and the appointment would seem to indicate that no special professional qualifications are necessary. The new inspector has expressed a pious wish that "the training and experience he has gained as a county councillor will enable him to carry out the important duties he will have to perform in the future."

In this aspiration we fervently join in the interests of the community; but we must add that the qualifications strike us as being inadequate. Surely some practical professional experience would be the best equipment, and the Local Government Board could easily find many deserving candidates who fulfil this condition. An occasional appointment, such as we indicate, would be a refreshing change, honourable to the Local Government Board, and a fitting recognition of long and valuable services to the community. To put the matter bluntly, there is still too much nepotism and too much political patronage, but these things are often spoken of now-a-days as "jobs." At a meeting of the Lindsey County Council, at which the chairman's resignation was accepted, a worthy alderman, who seconded an appropriate resolution "with moved feelings," remarked that "if Mr. Chaplin had any more good billets to dispose of the county council would be glad to hear of them." He probably meant well, but he wotted not of the unconscious irony underlying his unsophisticated speech. We would not assert, however, that the fact of Lincolnshire being Mr. Chaplin's own county is otherwise than a coincidence.—*The Surveyor*.

WOLVERHAMPTON GROCERS AND MARGARINE FRAUDS.

As a result of the recent prosecution of a Wolverhampton Town Councillor for butter adulteration, the Wolverhampton grocers have held a meeting and adopted the following resolution:—"That this association considers the extensive frauds practised upon the public by selling margarine for butter, as evidenced by the numerous convictions for this offence in various police courts, to be a grave scandal to the provision trade, and is of opinion that in order to protect the consumer from fraud and the honest trader from unfair competition, it is imperative that the Margarine Act be immediately so amended as to require all manufacturers and vendors of margarine to supply it without the addition of any colouring matter, unmixed with butter." If this movement spreads, there will be some heart-felt grief amongst margarine manufacturers. It is very likely that it will, for retailers have been badly victimised under the present system.

ENGLISH NATURAL MINERAL WATERS.

It is a curious fact that so little is done to bring before the public and secure the sale of our many natural mineral waters, several of which have properties in no way inferior to the most largely sold foreign waters. The Catley Abbey Natural Seltzer Water is a case in point; and, as we go to press, we learn that an excellent chalybeate well has been discovered in the neighbourhood of Chapel-en-le-Frith, Derbyshire. Messrs. Grace, Calvert and Thompson, Manchester, report that the sample may be regarded as a mild chalybeate water, the iron existing in a form which can be most easily assimilated by the persons drinking it. It contains about as much carbonate of iron as that found in the Gastein Springs, in Austria. It most closely resembles the water from Holywell Spring, at Malvern, but contains more carbonate of iron, and in some respects the water is of the same nature as that from the Tunbridge Wells springs. We trust the inhabitants will do something to popularise the well.

AN EXTRAORDINARY SCIENTIFIC YARN.

The present is an age of hoaxes. It is only a few days since, some ingenious reporter gulled the press of England with a hash up

of Mark Twain's "Yankee at the Court of King Arthur," and made Edison utter some of the most outrageous nonsense about electrical powers, which, in the event of war, he would use against England, that ever was conceived by mortal man, and which any person, save the average newspaper editor, would know could not have been spoken by any man having Edison's scientific knowledge. Our readers will enjoy the following, given by the *Daily Chronicle* to its readers on Monday last:—

"A sensational discovery, which, if the reports are confirmed, is likely to be attended by important consequences for physical and medical science, is spoken of in scientific circles here. A new conductor of light has been discovered by Professor Routgen, the well-known physicist at the Würzburg University. So far his experiments have resulted in the discovery that light penetrates wood and the flesh of men and animals, without, however, penetrating bones and metals. The professor succeeded in photographing metal weights placed in a shut-up wooden case. The photograph sent to Vienna shows only the weights, but nothing of the case. Another photograph of a man's hand shows only the bones, while the flesh remains invisible. Professor Routgen's experiments are conducted in the following way:—He takes a so-called Crooke's pipe—viz., a well-pumped out glass pipe, with an induction current going through it, and by means of the rays which that pipe is emitting, he photographs on ordinary photograph plates. In contrast with the ordinary rays of light, those rays penetrate wooden and organic matter and other opaque substances, just in the same way as the ordinary rays of light penetrate glass. Experiments were also made in photographing hidden metals with the apparatus shut, and produced equal success. The rays penetrated not only the wooden case containing the metals, but also the cover placed before the plate of the apparatus. The scientific world here is much agitated by the discovery, which it is believed will be of far-reaching importance for many branches of knowledge. Already, in its present stage, it will be an excellent expedient for surgeons, particularly in cases of complicated fractures of limbs, in searching for the bullets of the wounded, etc. The photo will show not only an exact picture of a fracture, or the situation of a bullet, but spare the patient much painful manual probing with the sound."

AWFUL DESTRUCTIVENESS OF FULMINE OF MERCURY.

FULMINE of mercury, used by European anarchists in the manufacture of bombs, is one of the most treacherous and powerful explosives known to science. Heretofore it has been employed in percussion caps and as a detonator for nitro-glycerine preparations. It explodes when subjected to a slight shock or to heat, and not a few expert chemists since its English inventor, Howard, have been seriously injured or killed while preparing or experimenting with it.

In France some years ago the celebrated chemist Barruel was manipulating the dangerous product in a heavy agate mortar, when his attention was suddenly distracted, and he let the pestle down with a little less care than ordinary. The explosion which followed blew the mortar almost literally to dust, and tore Barruel's hand from the wrist. Another distinguished chemist, Bellot, was blinded and had both hands torn off while experimenting with fulminate of mercury. Justin Leroy, a French expert in the manufacture of explosives, was one day engaged in experimenting with this compound in a damp state, in which condition it was supposed to be harmless. It exploded with such force, however, that nothing of M. Leroy that was recognisable could afterwards be found.

An English chemist named Hennell, while manufacturing a shell for military use, into the composition of which fulminate of mercury entered, was also blown literally to atoms, and the fragments of the building where he was conducting his experiments were scattered for hundreds of feet in every direction.

MORE TABLOID FOOD NONSENSE.

ACCORDING to Dr. George Plumb, the time is soon coming when hot water and food tablets will be the sole accoutrements of a kitchen. He says the essential food elements of a 1,200-pound ox can be got into an ordinary pill box. One of his tablets, the size of a pea, makes a large bowl of soup. A ration case of his planning, which weighed eight ounces, contained the following supply:—Three tablets of concentrated soups, equal to three quarts; four tablets of beef, equal to six pounds; one tablet of milk, equal to one pint; two tablets of wheaten grits, equal to two pounds; one tablet of egg food, equal to twelve eggs.

Recent experiments in the United States Army showed the utter absurdity of the scheme.

WE WANT THIS BILL LAW IN ENGLAND.

COLONEL BRICE, of Sumpkin County, has introduced into the Georgia Legislature a Bill enacting that every patent, proprietary or other medicine (barring physicians' prescriptions) shall bear on label or wrapper the proportions of each ingredient, the Act to take effect six months after its passage. Penalties are provided for each separate offence.

The interests threatened are, says the *Bulletin of Pharmacy*, of course, on the alert, and the passage of the Bill is more than dubious.

EAU DE COLOGNE DRINKING.

AMONG the other absurdities now passing current with respect to the alleged prevalence of the "cologne habit," is the statement that "ladies" rapidly acquire the custom of tipping with the liquid, taking a sip to sweeten the breath! Fancy the fragrant breath of anyone imbibing a liquid containing 80 to 90 per cent. of alcohol! Cologne may be a pernicious beverage, and in certain quarters it may

be serving as a temporary means of evading legislation, but it is certainly not likely to beguile its victims by its seductive charms as a breath-sweetener.—*Bulletin of Pharmacy*.

ANALYSTS DISAGREE.

DR. TEED, the public analyst for Islington, reported the result of his analysis of a sample of butter taken from a Fulham shop and found it to be largely adulterated with foreign matter. The analyst to the Fulham Vestry having certified the same sample to be genuine butter, the committee recommended that he be called upon to defray the cost of the second analysis, and that he be required to carry out the most rigid personal tests and exercise the utmost care in dealing with such samples as the vestry submit to him for analysis. Mr. Steel said it was a gross piece of business, and those members who were fond of throwing "brick-bats" should throw some at their public analyst.

A SENSELESS AND WASTEFUL LOCAL GOVERNMENT BOARD RULE.

A CORRESPONDENT writes: "The Local Government Board has a rule which, in a general way, is very necessary and proper, forbidding the poor people in workhouses to have food served up to them twice over. It is a rule humanely intended to obviate a repulsive dishing up of all sorts of odds and ends and scraps left by individual paupers for the feeding of workhouse inmates generally. "But the rule," says our correspondent, "certainly involves some rather remarkable consequences. Several of the workhouses—indeed, all of them more or less—are in a chronic state of difficulty about the disposal of stale bread. A workhouse dietary, of course, allots so much bread to each inmate, but everybody knows that actual consumption fluctuates a good deal with the time of year and with changes in the weather. It is impossible to avoid a considerable surplus therefore at times. The same thing is apt to occur in private houses, but in these cases it is rarely necessary actually to waste the good bread, which makes perfectly wholesome and palatable pudding, which children at all events are always able to enjoy. In the workhouse it would be highly appreciated as an occasional variation in diet. The Local Government Board, however, forbids this use of it, and the Westminster Guardians have been seriously discussing a proposal to put their surplus bread in a basket outside their gates as a means of distributing to the poor outside what they are forbidden to make any use of within."

A FOWL DECISION.

At the South-Western Police-court, on January 1, Mr. Lane, Q.C., gave his decision in the summons brought by the Wandsworth District Board of Works against Charles E. Brooke, a wholesale game dealer, trading as Messrs. Charles E. Brooke and Sons, at 39, Leadenhall-market, for selling a dozen fowls at 6d. a piece, the same being in a putrid state, and unfit for the food of man.—It appeared that the fowls were sold to a costermonger, who, on discovering their condition, took them to the Board's sanitary inspector, and, on the application of this official, the magistrate ordered them to be condemned.—Mr. Hanne defended, and the summons had been adjourned for the magistrate to look into the authorities on the question whether the defendant could be considered responsible, the fowls having been sold by his agent.—Mr. Lane decided in the defendant's favour, as the fowls were not exposed for sale, but were voluntarily given up by the purchaser. The fowls, he pointed out, were not liable to be seized, as "they were not exposed for sale or deposited in a place for the purpose of sale." Under these circumstances, the wholesale dealer was not liable, and the summons would be dismissed. He refused to grant costs as the defendant ought to have exercised more care.—Mr. W. W. Young, who appeared on behalf of the Board, was granted leave to apply for a case for the consideration of the superior court on another occasion.

"THE BRITISH MEDICAL JOURNAL" ON INSANITY AND CIDER.

ON December 21, our contemporary said:—"For some time past the claims of cider, as a temperance drink, have been loudly proclaimed; yet in the report of Burghill Asylum, the medical superintendent states that more people were in the asylum through cider drinking than through any other cause."

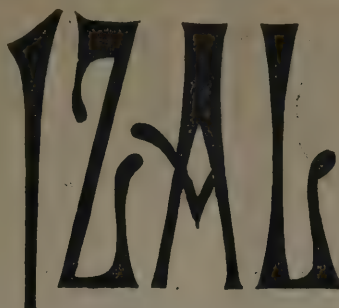
Dr. J. A. Chapman writes, in reply to the above:—"I must ask you to be kind enough to contradict this. The only expression of opinion that comes anywhere near it in any of my reports is in that dated January 7, 1873, where I say:—'I would suggest a doubt—which, in my mind, is more than a strong one—whether the custom, which in Herefordshire at least, is so universal, and in the opinion of the labourer so essential a one, of paying him a large moiety of his wages in drink, has not a very strong influence on these figures.' I was thinking not merely of what the labourer thus got that was pernicious, but more of what he did not get, and, still more, what his wife and family did not get, of what was beneficial. Cider may be as great a cause of insanity as stated, but I have never said so, and am quite unable to prove or disprove such an assertion.—I am, etc.,

"J. A. CHAPMAN, Medical Superintendent.
"Asylum, Burghill, Hereford, December 21, 1895."

ANSWERS TO CORRESPONDENTS.

G. G. DUDDELS.—The article in *Science Siftings* upon Van Houten's Cocoa was as ignorant as it was unjustifiable. Its analysis of Dunville's Whisky was glaringly incorrect. You do well to place no credence in them.

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Non-Corrosive,
Non-Volatile.



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IZAL CREAM. Bland and emollient. A very convenient antiseptic application for the skin, and useful for rubbing on the bodies of fever patients during the period of desquamation, thus preventing infection from the scales. In tubes, 1s. each.

IZAL OINTMENT. A powerful antiseptic ointment extremely valuable for the healing of wounds, burns, and scalds, chapped hands, broken chilblains, etc. In pots, 1s. 1½d. each.

IZAL TOOTH POWDER. This is a powerful antiseptic powder, destructive to the acid forming bacteria, which cause the

decay of the teeth and sponginess of the gums. Its daily use will keep the teeth sweet and the gums healthy. In boxes, 1s. each.

IZAL LOZENGES are efficacious in Coughs, Colds, and Sore Throats, more especially when of an ulcerated or diphtheritic nature. They are invaluable as a preventive against infection. Price, 1s. 1½d. per box.

IZAL SMELLING SALTS, for the cure and relief of Influenza, Catarrh, Cold in the Head, Faintness and Giddiness; useful whenever a smelling bottle is required. Price, 1s. 1½d. per bottle.

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Food and Sanitation.

SATURDAY, JANUARY 18TH, 1896.

COMPRESSED GAS CYLINDER EXPLOSIONS.

WHEN a youth the other month struck a passer-by with a compressed gas cylinder of the same character as that which exploded and blew a man into pieces at a

London station shortly before that, the public and the press expressed surprise that articles which are practically "bombs" should be thus carried through the streets.

An enquiry is asked for into the use and transit, etc., of these articles. Such being the case, it is just as well that it should be known that at hundreds of restaurants and hotels throughout the United Kingdom compressed gas "bombs" are in daily use and liable to explode at any moment, and their existence is entirely unsuspected by the general public. At one popular restaurant we know of near Ludgate-hill, much frequented by editors, one of these bombs could always be found in use with a patent soda-water machine. When we tested these carbonic acid gas "bombs" some years ago, they were charged to a pressure of, we think, 2,000 lbs. per square inch. They came from Germany, and were alleged to be tested, we believe, to 3,000 lbs. before filling. What we wish to point out is the obvious fact that these cylinders, bottles, or tubes receive a considerable amount of rough usage, and that they suffer wear and tear, and, whilst six years or so ago they might be fairly safe, it may well be that they are not so at the present time. One of them exploded in the West Riding of Yorkshire some time ago, and if any inquiry is to be made into the subject, it may be as well if this branch of it be not overlooked. We have enough "made in Germany" curses without this of "bombs," and as we like many of our fellow journalists personally, even if we don't attach much value to their opinions, we cannot think, without a shudder, that one moment they may be enjoying a chop and bitter, and the next be the subject of a minute search by horrified officials anxious to gather up as many fragments as possible.

THE DANGER OF LEAD PIPES.

MEDICAL men, especially those in the West Riding of Yorkshire, have had occasion to strongly condemn the use of lead pipes for water carriage. The latest place to suffer from this insanitary practice is Mosboro' and the adjacent villages. Dr. Macintosh, of Chesterfield, medical officer for Mosboro', has had an intimation from Dr. Jones that a number of illnesses had been caused by lead poisoning in the Killamarsh and Half-Way district. Dr. Macintosh said he at once took steps to apprise Mr. Frith, their engineer at Baslow, of the facts, and gave instructions that a liberal quantity of stone lime should be at once put into all the outlets through which the water supply of the affected districts must necessarily pass. It had been pretty clearly settled, said the doctor, two years before, when with others he was in London with reference to a previous outbreak of a similar nature to the present, that for checking the evils of lead poisoning they could for the moment do nothing calculated to be more efficacious than impregnating the supply of water as completely as might be with lime, which nullifies the evil power of the humic and other acids present in the water. It is this acid which acts upon the leaden pipes and causes the mischief. In explanation of the presence of humic acid in quantities sufficiently large to inflict so much mischief, the medical officer drew attention to the fact that as two years ago, so in the present instance the mischievous epidemic has followed heavy rainfalls, which were preceded by long droughts. The outcome of this series of circumstances is that by the decay in the reservoirs of a large quantity of moss, peat, and other vegetable matter, humic acid is generated in extraordinary quantity, and it is this abnormal acidity of the water that is accountable for the alarming epidemic of lead poisoning. Dr. Macintosh stated that he had taken measures to elicit the opinion of all the

medical gentlemen within the affected area as to the outbreak, but up to the hour of that interview he had only received replies from two, both of whom concurred in his opinion. It must, however, not be forgotten, he said, that private practitioners could not be compelled to give an expression of their opinion. The doctor feels confident that as a consequence of the twofold influence of the water contained in the reservoir becoming gradually more settled, and the lime present in the outlets counteracting the insidious work of the acid upon the leaden pipes, the mischief will from now speedily subside. With reference to the employment of leaden pipes, Dr. Mackintosh said it should be borne in mind that those pipes were the private property of the houseowners, and not of the Rural District Authority. All the pipes owned by that authority were of iron. The authority was responsible for the delivery of what would be called pure water, although, as a matter of fact, no water was chemically pure. But they were not responsible for such water supply having to pass, in its course to the houses, through leaden pipes. They were expected to lay their iron pipes within a reasonable distance (what was a reasonable distance had not been strictly defined, but they generally agreed upon a distance of about 66 yards) of all house property; and from that point the householder had to provide the pipes, which were mostly lead. The present epidemic showed that the severity of the various cases approximated pretty accurately to the length of this leaden piping that the water had to traverse in order to reach the houses of the victims—a clear proof that the mischief has been correctly diagnosed. It would appear that as betwixt the authority and the outside public, there is some divergence of opinion as to the powers of the authority with respect to the pipes laid down by private owners in connection with their own property; but whatever may be their true position as relates to that particular point, it would seem pretty clear that the water supplied by the public authority becomes dangerous to human life only after passing through the pipes that are distinctly private property.

Dr. Preston, of Mosboro', has analysed the water in every street in the village, with the result that traces of lead were found in every instance, and in some streets, where there are several new buildings, the amount was considerable.

This is an evil that has again and again been brought to the notice of the Local Government Board, and which that body has deliberately ignored. It could long ago have prohibited the use of lead pipes for water supplies, but it prefers to let lead poisoning go on spreading disease broadcast. In this latest case we have new houses fitted with the insanitary pipes!

A TEMPTING APPOINTMENT.

THE Ashford Urban District Council has set an example almost rivalling that of the careful man who gave his little boy a penny to induce him to go to bed without supper, then stole it from the child in the night, and gave him a thrashing as well as depriving him of breakfast in the morning for having lost his penny. The Ashford reckless spend-thrifts want a Sanitary Inspector, and the Sanitary Committee recommended the appointment of an inspector of nuisances at a salary not exceeding £1 per week.—The Chairman said this question had agitated the minds of the old Local Board. The surveyor's time was monopolised so much by sanitary measures that he had been unable to do his proper work. The committee therefore thought they should have a proper man for the work, and they also thought £1 per week would be adequate.—Mr. Batchelor inquired whether the man would be a sub-inspector under the surveyor. They could hardly expect to get a qualified man at that salary.—The Chairman said he would be under the surveyor, and in reply to Mr. Rutter he added that the surveyor's salary had never been dissected to show what portion was represented by sanitary work.—Mr. Denness thought the dust-cart men could do the work.—Messrs. Gibbs, Knowles, Batchelor and Harpur approved the idea, and the recommendation of the committee was eventually agreed to, it being stated that the greater part of his duty would be the removal of cases to the Sanatorium.

We advertise their wants and views gratis, and, at the same time, offer the Ashford Council a little advice: If they get a sanitary inspector at £1 per week, that £1 will be worth the man.

But this kind of ignorance is not confined to Ashford. At Horfield there is at the present time an outbreak of fever, and the office of Inspector of Nuisances is held by the same person who collects the various rates of the parish. "Now," says a correspondent, "if the Inspector of Nuisances does

his duty he must necessarily come in contact with the causes of contagion, and hence, when in discharge of his rate collecting duties, he must become a nuisance himself, and a source of danger to the families of the houses he visits. Some years ago the office of Inspector of Nuisances in Horfield was held by the Surveyor, who, of course, did not come in contact with the residents generally. By what occult piece of wisdom or folly the Board should give the appointment to a rate collector it would be difficult to conceive. Surely such a dangerous office as Inspector of Nuisances should be held by a comparatively isolated man, and not by such a ubiquitous individual as a rate collector. If this is a specimen of the wisdom displayed by the Urban District Council, it is only another argument in favour of our speedy inclusion within the better sanitary area of Bristol."

THE REMEDIES OF ANIMALS.

FROM the earliest ages animals have been credited with a considerable knowledge of the medical properties of plants. Legend relates that Esculapius cured a patient by using an herb which he had seen a sick goat search for and eat. In the middle Ages systems of therapeutics (bestiaries) were founded upon reported animal practice, just as to-day the populace confide implicitly in the sovereign virtues of Indian "blood medicines," and Chinese, negro, or gipsy "roots" or "herbs." A writer in the *Spectator* gives a most elaborate and interesting list of the remedies reported to be used by animals for either the cure or prevention of disease. Grouse, for instance, during an epidemic of bird-plague, have been known to fly down to the sea shore and eat the salt-crystal evaporated upon the rocks. Pheasants scratch up and eat the roots of the wild arum, which are so pungent as to blister the tongue, and also the colchicum-root, presumably as aromatic digestives; at all events pepper and other spices must be added to their food when domesticated. Quite a variety of substances are eaten apparently mainly for their mechanical effect as emetics and purgatives by the carnivora. This is the *rationale* of the familiar use of grass by dogs and cats, also by lions, tigers, and leopards, and of ashes or dirt by dogs fed largely from dishes or upon cooked foods. Our author also adduces the fondness of ruminants for salt and of birds for grit and gravel as cases in point, but these come distinctly under the head of diet and normal aids to gizzard-digestion. The same sort of objection applies to the great variety of water, dust, and mud-baths given by him, though, so far as the last two are directed against parasites, they may be regarded as remedies.

Indeed, the impression decidedly given by a careful study of the whole list is that the actual amount of really "medical" knowledge possessed by birds and animals is very slight, as would naturally be expected in view of the absence of any form of language adequate to transmit the knowledge of one generation to the next. Disease is such an infrequent and irregular factor in animal welfare, leaves such comparatively slight permanent imprints upon either mind or body when mild, and none at all, of course, when fatal, and is so very seldom inherited, that it is hard to imagine how "remedial" instincts of any sort could well be transmitted, while the amount of therapeutic knowledge directly acquired during the brief lifetime of an individual must be very limited. Speech is absolutely necessary for the transmission of any but the most rudimentary forms of knowledge. In the realm of surgery and external applications birds and animals make a somewhat better showing, because parasites and wounds or other injuries play a much more frequent and constant part in their experience, and hence some rude idea of their treatment can both be acquired by the individual and transmitted so as to be acted upon by natural selection.

And yet even here it seems to be largely a process of using the first application that comes to hand. Nearly all birds and animals use dust-baths or mud-baths of some sort to protect themselves against vermin, and some are said to exercise a choice between different sorts of mineral-laden earths. Sea-birds are said to seek fresh water to bathe in. The dog in particular and carnivora in general cleanse and soften their wounds by licking until a sort of plaster forms over them, composed of saliva, hair, and dust. The elephant blows dust from his trunk over his surface wounds, or covers them with mud, and even plasters up bullet-wounds with the same materials. He will also cover his sun-scorched back with cool green leaves. Tradition declares that the pig is the original inventor of the mud-bath—which seems tolerably obvious—and that several of the mineral-

springs of Europe were discovered by the swine-herds whose pigs resorted to them for the cure of skin eruptions or diseases. The famous waters of Bath are said to have been brought to human notice in this way by the swine of Prince Bladud. Nowadays such things are done by syndicates—which is much better. In fact, animal medicine and surgery are at best extremely primitive and blunted, and most of widespread popular beliefs to the contrary are either superstitions or due to misunderstandings. The fondness of cats for catnips, for instance, is solely due to the similarity of its odour to the feline genital secretions. The mongoose does not depend on an herb to cure him of cobra-bite, but upon his extraordinary agility and skill in avoiding the snake's stroke, and most such "cure" and "antidote" stories have little better foundation.—*Medical News.*

MARGARINE PROSECUTIONS.

At Hampstead, on January 8, Henry Wilkins, a dairyman, of New-end, Hampstead, a working-class district, appeared before Mr. Basil Woodd Smith and Mr. E. Gotto, in answer to a summons taken out by the Hampstead Vestry, charging him with having sold a quarter of a pound of margarine without its being labelled as such in accordance with the Margarine Act, whereby he was liable for a first offence to a fine of £20.—Mr. A. P. Johnson, vestry clerk, prosecuted, and asked the Bench to impose such a penalty as would be a caution to other offenders.—John Henry Leverton, sanitary inspector, said that he went to defendant's shop and asked for a quarter of a pound of "butter." He was served by Mrs. Wilkins, and he paid 3½d. He told defendant he had bought it for analysis, and the defendant said he sold it as he received it. Margarine was usually sold from a tub, but this was taken from one of three rolls standing on a box, which latter bore a label, "Guaranteed as pure butter." There was no label on the paper in which the quarter pound was wrapped.—The certificate of Mr. A. W. Stokes, the public analyst (produced), stated that the sample contained 75 per cent. of margarine.—The defendant said he bought it as pure butter, for which he paid 1s. a pound.—The Bench fined him £3, including costs, or in default 14 days' imprisonment.

At Wolverhampton, on January 8, Alfred Rudge, grocer, Bilston-street, was summoned at the Borough Police Court for offences under the Margarine Act. According to the evidence, the inspector was given an article wrapped in a paper, on which was printed "finest dairy butter" and "warranted pure butter." On being analysed, it was found to contain only 16 per cent. of real butter. Defendant, who pleaded that he had made a mistake, was fined £5 and costs.—A similar penalty was imposed upon Archie Pratt, grocer, Bilston-road, for not having a label attached to a slab containing margarine.

At Widnes recently, before Messrs. W. S. Barrett, J. Mercer, and W. W. Gossage, Lydia Appleton, Farnworth, was fined 40s. and costs for exposing for sale 25lbs of unlabelled margarine.—Councillor William Hodgkinson, Albert-road, a grocer and provision dealer, was summoned on four informations—two for selling margarine not wrapped in a paper marked "margarine," and two for selling a quantity of margarine as butter.—Abel Parkinson, his manager, was summoned at the instance of Mr. Hodgkinson for committing the offences.—Mr. Hodgkinson pleaded not guilty, and his manager pleaded guilty.—Mr. T. Swift defended Mr. Hodgkinson.—Mr. Parkinson said he visited Mr. Hodgkinson's shop in Albert-road, and from two dishes on the counter—one labelled "Pure Butter, 1s," and the other "Pure Butter, 10d"—he purchased three-quarters of a pound of each, and on one of the papers the defendant Parkinson, who served him, wrote in pencil the word "margarine" before handing it to witness. The county analyst (Mr. J. Campbell Brown) certified that the shilling butter contained 10 per cent. of water and 70 per cent. of fat other than butter, and that the tennypenny butter contained 10 per cent. of water and 50 per cent. of fats other than butter.—In cross-examination by Mr. Swift, witness admitted that he did not see Mr. Hodgkinson in the shop.—Mr. Swift said Mr. Hodgkinson had had Parkinson in his employ eight years as manager, had always placed great confidence in him, and up to the present had never found that confidence misplaced.—The Chairman announced that they had decided to fine Parkinson £5 and costs and the analyst's fee in each of the two cases. With regard to Hodgkinson, they felt satisfied there was no case against him, and the summons against him would be dismissed.—The fines and costs amounted to £12, which was paid.

At Romford on January 9, Henry Planner, provision merchant, of 231, Cambridge-road, Mile-end, E, was summoned for selling butter which was not of the nature, substance, and quality demanded, contrary to the Sale of Food and Drugs Act, 1875; and he was further summoned for exposing margarine for sale without having it labelled, as required by Section 6 of the Margarine Act of 1887. Mr. Bonsey was counsel for the prosecution, and Mr. William Hood, solicitor, defended. The cases were taken separately. Sophia Walpole, of 57, Ifley-road, Hammersmith, stated that she was the daughter-in-law of Horace Walpole, the informer in this matter. On December 7 she went to the defendant's stall in Romford Market, and asked for half-a-pound of 1s. butter, with which she was served by an assistant. She immediately handed the sample to Mr. Walpole, who was standing behind her. She did not ask for "half-a-pound of the

best shilling." She did not see any label or printing on the wrapper. Horace Walpole, who said he was an agent, stated that the analyst certificate pronounced that the sample was not butter, but contained 73 per cent. of margarine. In answer to Mr. Hood, witness said he was an agent for a firm of printers and for "one or two other things." He acted for Mr. Beck, who paid him, and who he believed was solicitor to the Grocers' Association. He had been engaged about three months in this business, and had received £2 2s., including expenses, for a case he had against the present defendant at Kingston-on-Thames, where he had a business. Witness admitted that the sample purchased in the Romford case was put in a paper bearing the word "Margarine" in bold type, but he did not see it until he undid the wrapper. Defendant's assistant told him his daughter-in-law had got what she asked for—"half-a-pound of shilling best." He paid for the sample from money he had drawn for expenses. Mr. Hood contended that Mr. Walpole was not really the purchaser, as he had paid for the sample out of Mr. Beck's money. The Bench, having considered all the points, fined defendant 20s. and costs. Mr. Hood said there would possibly be an appeal. In the second case the summons was dismissed, on the ground that the evidence was very conflicting.

A SERIOUS ACCUSATION.

In our issue of January 4th, we referred to an accusation by an anonymous writer in *The Medical Press and Circular* that in Dublin when a cow is reported by its owner to the board of guardians as suffering from pleuro-pneumonia it is examined by the veterinary inspector of that authority. If he declares it to be so suffering it is at once slaughtered and a sum paid out of the union funds to the owner as compensation for his loss. Being so declared, you would naturally suppose that the carcase is at once boiled down for glue or converted into manure. Nothing of the sort. It is sold on the sly by the sanitary authority to two butchers, whose identity is kept secret. These give about 3d. per lb. for the carcasses, and sell them to the middleman butchers for about 4½d., who sell them to the unsuspecting public as "finest Irish beef" at 9½d. You will scarcely believe that this traffic has been carried on for years with the full knowledge and secret approval of the board of guardians, the public health committee of the corporation, the veterinary department at Dublin Castle, and the Local Government Board. What do you think of that?

We said: "we think that it cannot possibly be true, and we should like to hear from Dublin subscribers on the matter."

We know Dublin and those concerned with public health, and knew the accusation could not be true.

The *Dublin Farmer's Gazette* of January 11, says:—

There is one good reason, at any rate, why this absurd allegation cannot be true, and that is—because there has been no case of pleuro-pneumonia in Dublin for more than three years. It reminds us of the old rhyme about

"Guy Fawkes, that prince of sinisters,

Who once blew up the Parli'ment House, the King and all his ministers;

That is, he would have blown them up—ay, done it in a minute—

But a little thing prevented him—the King, he wasn't in it!"

"One Who Knows"—so little—must be first cousin to the "Trader" who lately wrote in the *Times* that cattle suffering from pleuro-pneumonia were being shipped from Dublin every week; or do the two pseudonyms cover the same individuality?

A WORD TO THE OIL TRADE.

MR. KENRICK B. MURRAY, secretary of the London Chamber of Commerce, Mr. Boverton Redwood, and Mr. Wm. P. Tomes are busy beating up support for the defence of certain petroleum interests. Let retail oil and colourmen be on their guard, and give no encouragement whatever to this movement, for it is neither in the interest of the retailer nor of the public. It is low flashing oils that cause the retailer to pay higher insurance premiums, and that make his shop nearly as dangerous as a dynamite bomb. The retail trader has been the catspaw of the manufacturers too long. He is fined for spent ground ginger, wheaten flour in mustard, margarine in butter, and a host of swindles which the manufacturers reap the profits of, whilst he gains disgrace, fines, and loss of trade. A 100° flash-point would lessen the profits of some American millionaires, but it would reduce the retail oil and colourman's insurance premium, and turn his business from being one conducted at the risk of his life into a much safer one. Moreover, it means the saving from horrible deaths of hundreds of people yearly. Let the oil and colourman therefore treat the petroleum defence movement with contempt. It is not started in his interest—of that he may be sure. We cannot for a moment believe that Mr. Kenrick B. Murray, Mr. Redwood, or Mr. Tomes can be aware of the truth about this question, or of the character of the oil gang in America whom this agitation would mainly benefit. If they study the subject they will drop the movement in disgust.

REVELATIONS OF THE BEER TRADE.

WHEN we have written against "chemical ale," and stated that the brewer can use the contents of his dust-bin for beer for aught the law would do to prevent him, his advocates have painted him as a paragon of virtue, albeit his concoction contains little English malt and hops, but much rice, sugar, and chemicals. The law, however, gives the brewer *carte blanche* for any turpitude he chooses to descend to, but not so the publican. But he can only be prosecuted for added water, because, shameful though it be, beer may be anything, and it too often is.

At Highgate, on January 6, Walter Joseph Bradley, of the Great Northern Hotel, Hornsey, was summoned by the Excise Authorities for diluting beer.—Mr. Hawkins prosecuted, and Mr. A. J. Ford defended.—Evidence was given to the effect that a sample of "four ale" was taken at defendant's house, and upon analysis it was shown to be diluted with water equivalent to $2\frac{1}{2}$ gallons to the 36-gallon barrel. The defence was that the cellar was in charge of defendant's manager. He was called, and denied ever having watered the beer. He drew off about $2\frac{1}{2}$ gallons of bitter and put in the barrel of "four-ale" that was sampled. Also he put in the finings as supplied by the brewers. He also put in the "waste" beer.—Cross-examined: Put a half-gallon of finings in and another half-pint later. The "waste" beer was made up of tap-drippings, etc. There was a sink under the beer tap to catch the drips, and that ran into a cask which was afterwards put into the four-ale. What customers left in glasses was also thrown into that sink. Spirits left in glasses were not put there. They were put in a "spirit save-all." Served temperance drinks, but the waste was thrown away. They did not have many temperance people, and they generally had a small lemon and drank it all up. (Laughter.) The Bench imposed a fine of £5 and costs.

Poor John Barleycorn, reduced to this pitiable condition by Mr. Gladstone's abolition of the malt tax, and by work-shirking Inland Revenue officials, who permit beer to be made of anything, and ruin our native barley growing and malting.

DANGERS OF TEETOTAL BEVERAGES.

LAST week we had teetotal wine owing to a high percentage of salicylic acid. We now have the *Daily Telegraph* pointing out the fact that

"Teetotalers often impress upon the community that their opinions are very weighty. The reason is now fully explained. People who drink lemonade, or at all events particular brands of it, imbibe therewith a certain quantity of lead, which in course of time becomes a solid mass, which gives weight both physically and mentally to the possessors. In the course of time those who drown themselves in lemonade are thus in the happy position of having prudently provided themselves beforehand with as much material as may provide a leaden coffin. These suggestions were developed before the Stratford magistrates, where Mr. Tomlin, a mineral water manufacturer, was summoned by Captain Kittoe, inspector under the Food and Drugs Act, for vending a syphon of lemonade which contained about one-sixteenth of a grain of lead per pint. The analyses were so clear on the subject that Mr. Tomlin admitted the offence, but was unable to understand how the lead got there, as the appliances and material he used were of the most improved description. It was like the fly in the amber. The only suggestion he offered was that the citric acid, without which lemonade could not be manufactured, contained the lead, not, however, in sufficient quantity to be noxious to health. Thereupon a magistrate, Mr. Barnett Tabrum, remarked: "The moral is, 'Don't drink lemonade.' If you take enough of it you'll develop into a leaden bullet. I suppose people are always being told not to drink intoxicating liquors because they do so much harm. I think it's just as well the public should know something about the dangers of lemonade." The Bench did not think there was any intention on the part of the defendant to infringe the law, so the penalty was modified to a fine of 1s. with 6s. 6d. costs.

At Preston, last week, an important Inland Revenue prosecution was heard, when John Hammersley, shopkeeper, of Marsh-lane, Preston, appeared to answer a summons for selling one pint of beer without having a retail license.—Mr. Wallace Child, inspector of Inland Revenue, said the beer in question was herb beer, but when analysed it was found to contain $4\frac{1}{2}$ per cent. of spirit, whereas it ought not to contain above two per cent. Defendant had previously been warned on an occasion when his beer had been found to contain close on six per cent. of spirit.—Mr. James Robbins, analyst from Somerset House, corroborated; and, in answer to the Bench, said an ignorant person might, in manufacturing these teetotal beverages, easily get $4\frac{1}{2}$ per cent. of alcohol, without having any guilty intention whatever.—Mr. Davies (a magistrate): There are "vaults of sobriety" all over the town. Do the drinks sold there contain alcohol?—Mr. Robbins: To a very slight extent; generally about 2 per cent., or under.—Mr. Child said all the "vaults of sobriety" were under inspection, and the drinks were sampled from time to time. He added that defendant had had the option of compromising the case by paying 5s. sovereign, but had refused the offer.—Defendant was fined £2 10s., including all costs.

In two cases recently, we found soda water having an abominable stench, arising from the fact that the bottles had been used for chemicals and had been imperfectly cleansed. The moral is that drinkers of temperance drinks should be careful to patronise only the products of high-class firms, like Schweppes. The consumer pays more, but he has the satisfaction of knowing that the quality is right.

GINGER.

MANUFACTURERS are still practising this fraud upon retailers and the public, and as in some cases their names are suppressed, retailers cannot be put on their guard so well as they ought to be. Surely by this time retail dealers ought to know the folly of shielding the manufacturer who dupes them, for not only are they his victims, but they aid him in bringing disgrace upon others by concealing his swindling.

ADULTERATION CASES AT WINSFORD.—At the Over Petty Sessions, Mr. W. H. Verdin presiding. Kate Fuller, of High-street, Winsford, was summoned for selling to Inspector Timmis six ounces of ginger adulterated with 5 per cent. of sandy matter. Defendant produced a tin bearing the words "Genuine ground ginger," which, she said, had been supplied to her by a Liverpool firm—one of the largest in the trade—in exactly the condition as when supplied to the prosecutor.—The magistrates' clerk held that the label on the tin was not a proper warranty, and that to successfully combat the prosecution there should be a written guarantee.—The bench considered that, while the vendor had purchased the ginger as the same in quality as that demanded of her, it was her duty to satisfy herself of its absolute purity by a written warranty from the manufacturer. The case would be dismissed on the payment of costs, 13s. 6d., for which defendant should apply to the manufacturers.

COFFEE v. CHICORY.

It is a mystery to us why grocers will persist in risking prosecutions for chicory in coffee adulteration, seeing that they always allege it is not done for profit. That being so why do they not sell the articles separately, and let the purchaser do the mixing if he wishes to spoil his coffee? In its use as a salad, chicory has a value, but in coffee it is only a very poor taste indeed that can enjoy it. At the root of the chicory in coffee question there is, undoubtedly, the cutting system in prices, which leads rival traders in their plans to influence business to offer articles at prices that cannot yield them a living profit if sold in a pure state. The grocer is the hardest and longest worked, and the poorest paid of all shopkeepers, and he will remain so until he sees his error, joins his fellow-traders in abolishing mad

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"cutting" prices, and avoids adulteration's artful aid. Last week there were several prosecutions for coffee adulteration, and in some of them the fraud benefited mainly the wholesale dealers, who put up the adulterated article in tins.

TYPHOID IN RELATION TO DRINKING WATER.

THE Indian Authorities, who, according to an Indian correspondent, have introduced the Pasteur filters at Dum-Dum, and are contemplating their introduction generally in cantonments with the view of prevention of typhoid, were, it is understood, much influenced by the testimony of the French Minister of War, General Zurlioden, that their use at the French stations has enormously diminished the typhoid mortality in the French army, in most instances practically removing it. A further striking proof of what pure water will do in the abolition of typhoid is furnished by the mortality returns for the Parisian suburb of St. Ouen. Three years ago, in 1892, the water supply to this district was of distinctly questionable quality, and during the twelve months there were recorded twenty-four deaths from typhoid fever, this, it is stated, being the average for the previous ten years. Proper arrangements for filtering the water being however established, deaths from typhoid fell to six in 1893, two in 1894, whilst during the year just ended only one death from this disease was recorded.—*Brit. Med. Jour.*

FOREIGN TINNED FOOD.

In consequence of repeated complaints being made in France concerning foreign tinned provisions, the Finance Minister has directed the Custom House control officers to exercise a stricter supervision, and to prevent the importation of such provisions. The boxes are nearly always lead-soldered. In accordance with a report drawn up by the Comité Consultatif d'Hygiène Publique, the sale of lead-soldered boxes is forbidden throughout France. In future foreign tinned provisions will be seized and sent to the police authorities with all particulars.

THE LATEST AMERICAN HOAX.—A THOUGHT MACHINE.

"FROM that 'perennial source of stupendous sensations,' as the United States has been described, come details of a marvellous invention by J. Emmner, jun., of Washington, who is alleged to have produced a machine capable of permanently recording thought. 'Man can think directly into a machine, and produce an accurate permanent record of his thought, transcribable at any time.' The National Press Association describes the machine as seen by some newspaper correspondents, with the utmost gravity, and proceeds: 'Mr. Emmner then requested silence for a moment, seated himself before the thought machine, adjusted it for recording, and opened the electric circuit. The mechanism began its smooth, noiseless motion, the cylinder, revolving on its axis, pressed softly by the electric pencil passing along its face. Then, as the inventor brought his head within a foot of the recorder, directing his mind upon the machine, a thin cloudlike thread wound spirally about the glistening film from left to right. This was the thought record, which, after several minutes of silent work, had overspread the entire film with its smoky, tinted coils.' The description seems exact, whether true or not."

Thus the *Pharmaceutical Journal*. Did our contemporary ever hear of a recent book by H. G. Wells called *The Time Machine*? The above humbug is only a stupid variant of Mr. Wells's ingenious story.

VENTILATION OF FLAX SCUTCH MILLS.

It is always a pleasure to hear of improvements being made in the conditions under which our workpeople have to earn their livelihood, and such improvements are always proof of the progress of any industry. We often hear of the advanced methods of handling and scutching flax on the Continent as compared with the way in which it is treated in Ireland. This is undoubtedly a fact, and is mainly due to the technical education more readily obtained on the Continent, and which is so essential to the success of any industry, and especially the textile trade. As a rule, Irish scutch mills are scattered in out-of-the-way districts, for the purpose of obtaining water power, the employers and employed having little or no opportunity of obtaining the desired technical education; and the same method of working has been in existence generation after generation, the workmen existing in an atmosphere of dust, which to the unaccustomed onlooker would appear impossible. The great improvements effected during the last twelve months in the ventilation of our large flax mills has led her Majesty's inspector of factories to suggest the adoption of a similar method for removing the dust from scutch mills. Various attempts have been made from time to time to

purify the atmosphere of scutch mills, but only in a half-hearted manner. Mr. John W. Stewart, of Boghill, Coleraine, was the first to realise the advantages, and obtain the benefits of a scutch mill free from dust. During working hours he was compelled to run the electric light constantly, and the light merely looked like a glimmer through the dust. Now that the atmosphere is perfectly free from dust, there is no occasion to use the light. Some time ago the Blackman Ventilating Co., Limited, of 31, Bridge-street, Belfast, undertook to effectually remove the dust, the conditions being that if it was not a perfect success they would make no charge. The necessary alterations were complete in a very short time, and the result is as stated. Mr. Stewart kindly offers to allow anyone interested in the trade to see what has been done at his mill, and several of the scutchers in the district are having the same principle applied to their mills, and when this is generally adopted the flax scutcher will be able to say his occupation is a perfectly healthy one.

THE ASYLUMS BOARD SCANDAL.

It is becoming every day more evident that the Metropolitan Asylums Board must go. To its incapacity other charges are added that make it stink worse than ever in the nostrils of all who want real work and efficiency in return for enormous sums of public money.

Islington especially has been treated in an exasperating way by the Asylums Board, and at the meeting of the Islington Guardians last week Mr. G. S. Elliott, L.C.C., presiding, Mr. Lambert asked if anything had been done by the Metropolitan Asylums Board towards proving or disproving the statements and allegations which Mr. Elliott had made against the Board. Mr. Elliott said that he had received private information that large sums of money were being made out of the purchase of sites for the Asylums Board Hospitals. He was told that the minutes of the Board would show that this was the case. Personal examination showed him that about £20,000 had been made in a short time by the transfer and sale of the sites at Tottenham and Lewisham.

If the Metropolitan Asylums Board refuses to clear itself, perhaps the Local Government Board may consider an inquiry necessary, unless the members of the two Boards are so personally friendly that the one does not wish to hurt the feelings or terminate the incapacity and existence of the other.

A WARNING ABOUT HEALTH RESORTS.

FORTY years ago Mentone was a healthy village in France, where lived peasantry happy in their farms and their superb physical state, conditioned by the climate. It was discovered that the region was a most healing climate for consumptives, and it became the Mecca for the unfortunates of Europe so stricken. The inhabitants abandoned their farms to wait upon the strangers. The strong, healthy women forsook their dairies and became the washerwomen of the consumptives' clothes. No precautions were taken; the disease was not then understood as now, the theory of the tubercle bacillus not having been discovered. The place to-day is bacillus ridden, a pesthole, death itself. The hitherto strong inhabitants are emaciated, a coughing, bleeding people, filled with the germs of consumption. The soil and the air are both contaminated with them. It is no longer a resort. The same fate, it is believed, awaits many other similar health resorts unless active means are taken to destroy all germs. This will be a most difficult task, because consumptives themselves, as a rule, are not thoughtful of the danger they spread, or of the rights of others. They should bear in mind that if all others had been careful they, too, might have escaped.

COMPOSITION OF MICROBES.

E. A. SCHWEINITZ and M. Dorset (*Journ. Am. Chem. Soc.*) have examined micro-organisms to ascertain their proximate and ultimate composition. Tubercle bacilli were found to contain cellulose, together with palmitic and arachidic acids; on the other hand, the glanders bacillus appeared to contain no cellulose, while the acids present were oleic and palmitic. The germs were cultivated on the same media, and, with the exception of nitrogen, there seemed to be but little variation in their composition, when the medium was varied. The results of elementary analyses of three forms (the two mentioned and the bacillus of the swine plague) showed marked differences in the proportions of nitrogen, carbon, hydrogen, and ash present.

MILK DISEASE AND ADULTERATION.

In a lecture, delivered on January 9th, at Hulme, Dr. Niven, Medical Officer of Health for Manchester, said:—

"If you can plume yourselves on your good water you cannot on your good milk. Samples taken from the shops so recently as Tuesday last showed a thick sediment, a mass of micro-organisms. Such stuff should not be sold for human food; and yet a large quantity of the milk sold in the city day by day is in this condition. Milk is a substance in which disease germs grow with amazing rapidity, and that which is but slightly infected at first may speedily become full of infection. There is one remedy—boil it. Never give it to an infant without first taking this precaution." This recommendation gained point from a subsequent remark of the Doctor: "Over 60,000 quarts of milk are consumed in Manchester every day, most of it, I should think, more or less dirty." In a few concluding sentences he spoke of the extreme importance of care being taken to prevent the spread of consumption."

A few weeks ago, in dealing with infant mortality and infants' food, we pointed out how very dangerous to infant life were the malpractices of skimming, watering, and surreptitious drugging with preservatives. It is not pleasant to learn that, in so important a city as Manchester, the medical officer finds it necessary to thus warn the public of the character of the milk supply, but, bitterly as many may resent it, warnings like this of Dr. Niven's must be uttered throughout the United Kingdom persistently, until Parliament and local authorities awake to a full realisation of their duties. Between fifty and sixty thousand people, mostly young adults, die every year in England and Wales from consumption, and about as many more from other tuberculous diseases. Our able contemporary, *The Surveyor*, makes in the light of this mortality the following comments on these figures:—

For comparison, it may be called to mind that only about sixteen thousand deaths occur annually through accidents, but three hundred are due to homicide, and to hydrophobia—against the prevention of which we stringently legislate—in one year (1892) only seven deaths were attributed. We may hope that medical science may in the near future discover some effectual means of combating this terrible disease. But in the meantime?

We will answer our contemporary's question by showing what is being done in the meantime.

1st. There is scarcely one Board of Works, Vestry, Town Council, or local authority in the Kingdom that has an adequate staff of sanitary and Food and Drugs Act inspectors, and this widespread policy of sanitary starvation is one potent factor in the causation of disease, and leads to the sacrifice of thousands of lives per year. To take a case in point that occurred last week:—

At Worship-street, Deborah Lazarus, of Quaker-street, Spital-fields, was summoned by the London County Council, under the Dairies and Cowsbuds Regulation Act, for not removing on the outbreak of a contagious and infectious disease on the premises, all milk and utensils, and for carrying on the trade of a milk dealer without the premises being disinfected.—Mr. Collman, for the London County Council, said that the defendant, a widow, was registered as a milk dealer, under the Act, and had been supplied with the regulations. On November 12, a medical gentleman was called to attend a boy ill in the house, and certified that it was a case of scarlet fever. The defendant was visited by the sanitary authority of the parish on the following day and cautioned, but the day after, on the 14th, she was seen to sell milk to a child. The sanitary inspector followed the child, and induced it to throw the milk down a drain. Again defendant was cautioned, but the following day milk was again found on the counter for sale.—Mr. Corser raised, by a question, an important point as to what happened in the event of delay in disinfecting.—Mr. Collman said the parish sanitary authority did that work, and called Mr. Cooke, sanitary inspector, who said that the premises were disinfected on December 13—a month after the defendant was cautioned—and it was not until the 19th that the County Council's permission was obtained.—Defendant pleaded that she was very poor, and had a family to support, and that the delay in disinfecting was so long.—Mr. Corser said it was important to carry out the Act, and imposed a fine of £3, and £2 costs. Time was allowed for payment.

What do these facts reveal?

The parish sanitary authority was responsible for disinfecting the premises that was not done until December 13—a month after the poor woman had been cautioned—and the County Council did not give permission for her to open her premises until the 19th. The woman was very poor and had a family to support, and the delay in disinfecting was very long.

If the facts were searchingly investigated, it would be found that the local sanitary officials are, as usual, far too few to do the work promptly and thoroughly, and the result is dangerous botching that spreads disease broadcast, causing more misery and monetary loss to the community than would pay for a dozen Geneste and Hercher's *Pulverisateurs*, and the salaries of half a dozen more thoroughly trained sanitary inspectors in the parish. But

this aspect—the commonsense one—of the public health question is just the one for which mighty newspaper editors, prating politicians, or the public, do not care a rap. As an illustration of the truth of this, let us instance the following piece of ignorant drivell from the leading article in a newspaper named the *Ballymena Weekly Telegraph*, of January 11th. Writing of the communicability of tuberculosis by meat, milk, etc., this editorial curiosity said:—

"Well might we sigh when we read such documents, and wish for the good old days that were—when mankind believed that the earth was flat as a pancake, and that the sun went round it every day; when dreams and visions governed daily life, and men ate, drank, married, and lived in more or less moral, mental, and physical ripeness to from two to six hundred years of age; when there were no Royal Commissions, nor technical schools, nor scientific gentlemen with fads to frighten the simple out of their senses with pernicious doctrines which newspaper editors have more sense than to publish, but which somehow or other find their way to publicity—generally, as a rule, through the questionable services of the sympathetic publisher. They had a way of their own then of disposing of gentlemen who made discoveries—they put them to death. We would not, of course, venture to suggest so drastic a remedy; but the world would be little the loser were their books and their theories so disposed of betimes. What a terrible fix would Moses have been in had he and the children of Israel lived in these days. Nobody then seems to have suggested that it would be well to boil the water set aside for drinking purposes; and if his followers suffered through the neglect of the precaution we are not aware of it—and, fortunately for them, neither were they. Here we are in this latter part of the nineteenth century perpetually worried with the constant dread of the unlovely bacilli, which science assures us we are for ever eating and drinking and breathing. The bare idea is almost enough to make one shake off the pleasing shackles of civilisation and betake himself to the woods and wilds."

Sensible, educated people reading the above may feel some regret that there is not also a way of dealing with such persons as the editor of the *Ballymena Weekly Telegraph*. We would not suggest a drastic remedy either, for we think his friends should take care of him. He would be safer and more useful to the public than occupying an editorial chair.

2nd. Magistrates, everywhere, do all they can to encourage the gross abuses and dangers of skimmed, watered, and drugged milk, and to discourage the inspectors and authorities prosecuting. They, in many instances, actually inflict a penalty on the local authority seeking to enforce the laws by dismissing cases on the flimsiest pretexts, or by fines of one shilling or so.

At Flint, last week, Jesse Winter, dairy farmer, Corrist Farm and overseer for the township of Coleshill, was summoned for selling adulterated milk. Inspector Robert Jones said on the 10th December he bought a pint of milk from the defendant's son, from his milk cart in Flint, which on analysis showed not less than six per cent. of added water, calculated on the supposition that the milk was of the poorest quality, but if it was of a fair quality about 10 per cent. of water had been added. Acting on the suggestion of Mr. Lowe, the analyst, Inspector Jones took other samples from defendant's whole dairy of 23 cows, and the analyst's certificate stated that it would require an addition of 12 per cent. of water to reduce it to the strength of the previous sample. The defendant denied having added water, and stated that he had protested against the taking of the second sample from his dairy eight or nine days after the sample had been bought in the street. His cows, he said, had had their feeding changed. The Bench dismissed the case, saying that there was barely one per cent. more water in the sample bought from the milk cart in the street than in that taken from the whole herd in the dairy, and the samples were virtually the same.

In a report to the Derbyshire County Council, Mr. John White, F.I.C., Public Analyst, deals in the proper manner with the mischievous doctrine propounded by these Flint magistrates. Mr. White says:—

"In my opinion it should be no bar to a conviction in such cases as those to which I have just referred, even supposing it could be shown that the cow was giving similar wretched stuff. Milk is the normal secretion of the mammary glands of the cow, and such liquids as are sometimes given by some poorly fed and ill-conditioned beast have no more right to be called genuine milk than the fluid secreted in cases of disease, which may be found to consist of milk mixed with blood or pus. To so feed a cow as to cause it to yield a milk of abnormally low quality is to my mind simply an example of adulteration *via* the cow."

The Local Government Board, that has done nothing for the Adulteration Acts save ill, might learn a little needed prudence from the following:—

At Kettering, on Jan. 1, Herbert Chidley Davis, dairyman and publican, Thos. Bailey, and Alfred Hammond, dairymen, all of Kettering, were summoned for milk adulteration.—Hammond's case was taken first.—Mr. Samuel Clowes, inspector of weights and measures, deposed that he saw the defendant Hammond delivering milk, and asked for a pint of new milk.—The report of the public analyst was to the effect that 90·7 per cent. was milk, while

93 per cent. was added water.—The Chairman said the case was of such a trivial nature that it would be dismissed.—The cases of Davis and Bailey were taken together, and they pleaded not guilty.—Mr. Clowes said he saw Bailey selling milk in Victoria-street, and asked him for a pint of new milk. Witness suggested that the can should be shaken before the milk was supplied, as it had been standing. The charge was 2d., the price of new milk.—The report of the analyst was that 97 per cent. was milk and 3 per cent. added water.—Mr. Rawlins called Bailey into the box, and he deposed that he had purchased the business from Davis.—For the defence it was stated that *according to the Local Government Board the state of chemical science was not such as to give an absolute standard as to what was pure milk or not, and he held that no case had been established against the defendant.*—The Bench retired to consider the case, and on their return defendant was fined 1s. and 6s. 6d. costs.

If the Local Government Board officials had any regard for anything beyond the regular drawing of their salaries, they would cause magistrates like these to be warned that such decisions are manifest signs of unfitness to sit on the bench, and that there is such a thing possible as a deprivation of the honour of being a magistrate. But the Local Government officials prefer to make a parade of misleading statements such as the claiming before the Select Committee of the House of Commons the credit for the increase in the number of samples taken for analysis during the past four years, when everyone who knows anything about the subject is well aware that it is to the editor of FOOD AND SANITATION that the increased number of samples and better enforcement of the Acts against adulteration are due, and as the Local Government Board does so little that is useful or creditable it is just as well that it should be told the truth in a plain manner occasionally. Our public offices have too many jackdaws strutting in peacock's feathers. However, in case the Local Government Board means well, the following case may interest them:—

At Ashford, on January 10, George Collins, milkman, was summoned.—P. C. Fisher, stationed at Charing, stated that he purchased a pint of milk from the defendant, and Supt. Wenham deposed to sending it to the public analyst.—He was let off with a fine of 5s. and 11s. 8d. costs.

We do not know what they pay for an analysis in Kent, and what the cost to the county of the time of the police constable and superintendent was, but the lot must have been like the servant girl's baby—very little indeed—if 11s. 8d. paid for it. But Southampton can equal Ashford; and so can Coventry. A few days ago, at the former place,

Georgina Smith, St. Mary's-road, was summoned. Analysis proved that 48 parts of fat out of every hundred had been extracted from the milk—in fact, it was skim milk, which had been sold as fresh milk.—The Bench inflicted a fine of 10s. and costs.—Frank Ashley, St. Mary's-road, was also charged with selling milk which contained 7 per cent. of added water.—Frederick Horace Hudson, inspector under the Act, said he called at the house at four o'clock, and asked for new milk. Mrs. Ashley said she had that morning's milk, and he replied that he wanted new milk.—Defendant said the milk was sold just as they had it. It had been standing since the morning, and he did not know whether water had been added before it was brought to their house.—The defendant was fined 5s. and costs.

At Coventry, on Jan. 10, before Mr. J. Rotherham, Colonel Woolcombe Adams, Mr. J. Hollick, and Mr. C. J. Hill, Samuel Kirby, farmer, Exhall, was summoned for selling milk 25 per cent. deficient of its natural fat at Bedworth. George Henry Salmons, inspector of Food and Drugs, prosecuted. Defendant was fined 10s and costs (10s. 6d.). Skimmed milk had been added, it was said, to new milk.

Newark magistrates show a trifle more intelligence.

On Jan. 9, before Mr. Riddell and Mr. W. E. Tallents, John Vasey, milk seller, Cartgate, Newark, was charged by Mr. George Horspool, inspector of Foods and Drugs for the Newark Corporation, who purchased a pint of new milk, and sent part to Dr. Ashby, public analyst, who reported that the milk contained 7 per cent. of added water. He handed in the analysis, and wished to say that it was the lowest adulteration they had had. Defendant denied being guilty. He purchased the milk of two farmers. It was mixed, and he swore no water was put to it on his premises. The bench said they must protect the public, and were bound to convict. Defendant would have to pay 20s. and costs.

At Rochester, Walter Snelling, Salisbury-road, Chatham, was summoned by Supt. Lacy, who said that he requested P. C. Newman to purchase some milk from the defendant. This had been analysed by the County Analyst, who found that the specimen sent to him was composed of 77 parts milk and 23 parts added water.—Defendant said he served the milk exactly as it was served to him.—The Magistrates' Clerk: Whom do you buy your milk from?—Defendant: Well, the gentleman requested me not to mention his name. (Laughter.)—Supt. Lacy said the lad had been in business for himself for about twelve months. He had had samples of the defendant's milk on two previous occasions, but it was then all right.—The magistrates imposed a fine of 20s. and 9s. costs, which were paid.

If milk vendors strive to teach farmers a lesson in cases where they suspect the farmers of fraud, magistrates give them no encouragement.

At Marylebone, on Jan. 13, Edward Shemilt, farmer, of Langdon, Rugeley, Staffordshire, was summoned, at the instance of the Vestry of St. Pancras, for selling milk which contained 8 per cent. of added water.—Mr. Ricketts, solicitor, prosecuted.—The evidence was that the defendant had been in the habit of supplying a firm of milk dealers, known as the Callow Park Milk Company, with milk. Recently one of the Company's employees was summoned for selling what, upon analysis, was found to be adulterated milk, and it was in consequence of that prosecution that one of the Vestry's inspectors intercepted, at the request of the Callow Park Company, the milk sent by the defendant to London, and examined it. The result was as stated above.—The defendant emphatically denied the charge, and averred that he was the victim of the Railway Company's employees, who must have tampered with the milk while in transit.—Mr. Bennett imposed a fine of 30s., with 22s. costs.

The Callow Park Dairy Company have a large business, and what can injure that business more than a prosecution? Mr. Bennett assists them, however, in suppressing adulteration by a ridiculous penalty like the above.

At Hull, on Jan. 8, Joseph Fewlass, Church-street, was summoned for selling milk containing 7½ per cent. of added water.

Inspector Baldock proved the case, and said that he was the cause of the defendant being summoned for a similar offence about a month before. When he took the second sample the defendant had not received the summons for the first offence. Fined 40s. and costs.

In the light of facts like these, can anyone be surprised that one-fifth of the total children born die before they attain the age of one year? And is not this appalling death-rate one which should be terrible enough to even arouse the lazy loafers of the Local Government Board to do something to earn the money they draw from their country, and stay this slaughter of the innocents!

Our newspapers rave about justice to Armenians and ask that blood and treasure should be poured out for them.

They have neither the time nor the knowledge to ask for justice to the countless thousands, old and young, slain in our own land by fraud and ignorance and the lack of a really adequate number of sanitary officials. There is here and there a little—very little—done to arouse the public mind to a true understanding of the subject as

At Liverpool on January 7, when Councillor Sheldermine spoke of the risk of infection through the agency of milk, and said:—One anxiety that I have in connection with the improvement of the health of the city is that all milk which comes into our homes should be compulsorily sterilised beforehand. By sterilising I mean made harmless and absolutely free from infection. Dr. Flinn, who is our chairman to-night, or any medical gentleman with half his great experience, could tell you that milk is one of the most fruitful sources of the spread of infection. Bacteria will germinate in milk in a very short time. It has been clearly proved that the intestinal and stomachic troubles of infants are largely due to bacteria in milk. Now as over 95 per cent. of the whole of the population of this great city use milk in some form during the twenty-four hours, surely it is absolutely necessary that it should be made innocuous and harmless by some means or other. We are very particular about the Liverpool water being pure and palatable; it is analysed by the public analyst from time to time, and reported on to the Water Committee: but milk, forsooth, which is twenty times as susceptible to infection, enters our houses comparatively without question or examination. In New York the Pasteur process of sterilising milk has already materially reduced the death-rate amongst infants. So that this is no mere experiment, no vague idea, but an established fact. If it were possible I should much like to know how many cases of typhoid, of scarlet fever, of diphtheria, are caused in this great city of ours by impure milk, and which are never traced to it at all. We have inspectors to prevent the use of diseased meat, fish and poultry, and other public servants to look after the public health; we have also infectious disease hospitals costing about £25,000 to maintain, yet we do nothing to guarantee the healthfulness of the thousands of gallons of milk brought into Liverpool and produced from shippens in this city. Prevention is better than cure. Thanks and all honour to the memory of the late M. Pasteur. It has been proved that the bacilli or germ of typhoid, of diphtheria, and nearly all other infectious diseases can be killed by his method of sterilising at one and the same operation. What I am anxious to see is the compulsory sterilising of all milk that is used in Liverpool, and I am satisfied that if that was made law there would be no occasion to enlarge our infectious disease hospitals, but that there would be a considerable reduction in the £25,000 we spend for maintenance, and, what is of vastly greater importance, there would be a considerable reduction in human suffering and anxiety.

Unfortunately, public life is conspicuous by the absence from it of men having such a true appreciation of this question as Councillor Sheldermine possesses.

CURIOUS BELIEFS ABOUT FOODS.

THIS list of food remedies, compiled by the *Housekeeper*, is a curiosity.

Celery is invaluable as a food for those suffering from any form of rheumatism; for diseases of the nerves and nervous dyspepsia.

Lettuce is useful for those suffering from insomnia.

Watercress is a remedy for scurvy.

Peanuts for indigestion; they are specially recommended for corpulent diabetics. Peanuts are made into a wholesome and nutritious soup, are browned and used as coffee, are eaten as a relish, simply baked, or are prepared and served as salted almonds.

Salt to check bleeding of the lungs, and as a nervine and tonic for weak, thin-blooded invalids. Combined with hot water is useful for certain forms of dyspepsia, liver complaint, etc.

Onions are almost the best nervine known. No medicine is so useful in cases of nervous prostration, and there is nothing else that will so quickly relieve and tone up a worn-out system. Onions are useful in all cases of coughs, colds and influenza; in consumption, insomnia, hydrophobia, scurvy, gravel and kindred liver complaints. Eaten every other day, they soon have a clearing and whitening effect on the complexion.

Spinach is useful to those suffering with gravel.

Asparagus is used to induce perspiration.

Carrots for sufferers from asthma.

Turnips for nervous disorders and for scurvy.

Raw beef proves of great benefit to persons suffering from consumption. It is chopped fine, seasoned with salt, and heated by placing it in a dish in hot water. It assimilates rapidly, and affords the best of nourishment.

Eggs contain a large amount of nutriment in a compact, quickly available form. Eggs, especially the yolks of eggs, are useful in jaundice. Beaten up raw with sugar are used to clear and strengthen the voice. With sugar and lemon juice, the beaten white of egg is used to relieve hoarseness.

Honey is wholesome, strengthening, cleansing, healing, and nourishing.

Fresh ripe fruits are excellent for purifying the blood and toning up the system. As specific remedies, oranges are aperient. Sour oranges are highly recommended for rheumatism.

Watermelon for epilepsy and for yellow fever.

Cranberries for erysipelas are used externally as well as internally.

Lemons for feverish thirst in sickness, biliousness, low fevers, rheumatism, colds, coughs, liver complaint, etc.

Blackberries as a tonic. Useful in all forms of diarrhoea.

Tomatoes are a powerful aperient for the liver, a sovereign remedy for dyspepsia and for indigestion. Tomatoes are invaluable in all conditions of the system in which the use of calomel is indicated.

Figs are aperient and wholesome. They are said to be valuable as a food for those suffering from cancer. They are used externally as well as internally.

Bananas are useful as a food for those suffering from chronic diarrhoea.

ADULTERATION IN SALFORD.

Mr. J. Carter Bell, the public analyst, reported:—

"During the quarter ending December 31st, 1895, I have analysed 207 samples, consisting of 158 milks, 31 butters, seven coffees, two peppers, one sweets, three spirits, one bread, one tea, one wine, one lard, and one honey. Of these, 13 were adulterated, namely: Seven butters, five coffees, and one milk. The butters were adulterated with foreign fat from 83 to 87 per cent.; the coffees were adulterated with 100, 75, 55, 50 and 38 per cent. of chicory respectively; and the milk was adulterated with 5 per cent. of water. Of the 207 samples, 13 were private, namely: Six butters, five coffees, and two milks. Of these, eight were adulterated, namely: Three butters and five coffees. The difference in the percentage of adulterated samples is very great between the official and the private samples; thus in the former it is a little over two, while in the latter it is 61 per cent. Now that I have completed the twenty-first year of my public analystship, it will be interesting to look back and review the number of samples analysed for the Corporation, and also for the public. It will be seen that, in the early years, the number of adulterated samples was as high as 70 per cent., and that number has gradually fallen, till last year it was two, and this year (1895) only four per cent. The number of samples analysed during the last six years for the River Conservancy Committee, in connection with the various sewage schemes, has amounted to about 5,000."

CO-OPERATIVE COCOA.

At Ashford, Kent, on Jan. 7, Harold Kay, manager of the Ashford Co-operative Society, was summoned for selling cocoa adulterated with 27 per cent. of sugar and 23 of starch.—P.C. Benjamin Cordery, of New Romney, gave evidence as to the purchase of several articles at the shop of the Society in High-street, on the

9th ult., among them being a quarter of a pound of cocoa. After the purchase he told the assistant who served him that he had made the purchases with a view to their being analysed, and the young man went and spoke to the manager, and then returned to him and asked to be allowed to put a label on the cocoa. Witness told him he could not allow this, and the assistant then said the ticket ought to have been put on.—Superintendent Wenham produced the analyst's report on the article, and in reply to Mr. Bracher, who defended, he stated that the other articles analysed were correct.—Mr. Bracher said he wished the Bench to find that, although a trivial technical offence had been committed, it was a case that should be dismissed. The so-called cocoa was chocolate mixture, and was sold as such, and labels were supplied with it by the Co-operative Wholesale Society, with instructions that one should be affixed to each packet. If this label had been stuck on, as it ought to have been, the defendant would not have been there. Mr. Bracher pointed out that, to £2,000 worth of goods supplied to the members of the society, only £20 worth went to the general public, and also referred to the low price at which the article was supplied—6d. per pound—while pure cocoa cost a great deal more.—He called Frederick Charles Vallen, the assistant, who stated that he had made a mistake in not placing the label on the package. It was quite an oversight on his part. He was in the habit of affixing the label.—The Chairman said the Bench would convict, but they thought there was no intention to defraud in any way. Therefore, the fine would be a nominal one of 1s., and 13s. 5d. costs.

GILBEY'S BRANDY.

At Sleaford, Alfred Pick was summoned by Police-constable Lockwood, who deposed that on Wednesday, the 20th November, he visited the "Marquis of Granby" Inn, Wellingore, kept by defendant. He went into the tap-room as a rag and bone gatherer, and saw defendant's daughter. He first asked for two pennyworth of whisky, and then for a pint of brandy. Miss Pick supplied him with the latter, for which he paid her 3s. He was in the tap-room a quarter of an hour, defendant being with him. He looked and saw no notice up about the spirits sold being diluted. He afterwards handed the brandy to Supt. Taylor in the tap-room. By defendant: He did not order anything before he got into the tap-room.—Supt. Taylor, having put in his appointment as an officer under the Food and Drugs Act, said he visited defendant's house on the day in question. As witness drove into the yard, defendant came out of the door, but he took him back to the tap-room, where witness received the pint of brandy from Lockwood. He then told defendant he had bought it for analysis, and divided it into three parts, leaving one with defendant. He submitted a sample to the county analyst, whose certificate showed there were 53.73 parts of water. While he was sealing up the three parts, defendant fetched a bottle of Gilbey's brandy, and said it had come out of that. When he returned to the house, after being absent some time, defendant showed him a notice about the spirits being diluted, but it was not up when the spirits were sold, nor did defendant say anything about it before. He might say that Gilbey's were very careful about the spirits they sent out.—In reply to the charge, defendant said a notice was up in the place where the liquor was sold, and had never been taken down, but one had been taken down in the tap-room when they were painting there, and they forgot to fasten it up again. He would take his oath that the brandy was never adulterated by him, and it was sold as they bought it. It was one of Gilbey's bottles, as they had run out of the other kind. His daughter told him before she served the constable that she believed he was a detective, but he said "Never mind, if it's Mr. Taylor himself." It was through neglect that the notice was not again put up in the tap-room. Ada Pick, defendant's daughter, corroborated her father as to the notice in the tap-room being torn and never being replaced, but there was one up in the bar where they served the liquor. When she told her father she believed it was a detective, he said "Never mind, let him have it, as it's the same as we get it." By Supt. Taylor: The liquor was ordered in the tap-room, and paid for there.—The Chairman said defendant would be fined £1 and 3s. 8d. costs.—Defendant: Can I appeal, sir? It's a great shame; Gilbey's sell it, and we publicans are fined.

SLAUGHTER-HOUSES.

The clergy of the Pocklington Deanery have given unanimous approval to the memorial now being promoted by the Church Society for the Promotion of Kindness to Animals and the Church Sanitary Association, asking for further legislation respecting slaughter-houses, and for the institution of a Departmental enquiry with a view to bringing about, on the one hand, the better treatment of animals, and, on the other, the improved health of the human community, as the result of improved conditions of meat supplies.

DRUG ADULTERATION.

SIR CHARLES A. CAMERON, public analyst for the county of Meath, reported to Oldcastle Board of Guardians that a specimen of ammoniated tincture of opium submitted to him contained no benzoic acid, saffron, or oil of aniseed—three constituents of the properly-made tincture. It was deficient in spirit to the extent of 30 per cent., but to make up for these shortcomings it contained three times the proper quantity of its cheapest ingredient, namely, ammonia.

OUR LIBRARY TABLE.

"THE Gentleman's Year Book," for 1896 (Charles Letts and Co., Royal Exchange, London, 1s. 6d.), has for a sub-title, "Hygienic Record and Indispensable House Book," and it admirably justifies its claims. Dr. Phillpotts in editing it has compiled a mass of information of exceptional value. Domestic filters and the dangers attending the use of the bulk of the makes on sale, ventilation, diet, indications of disease, spas, bathing places, and mineral waters, with notes on the suitability of various places for different diseases; useful hints on Continental travel; lists of hydropathic and nursing institutions; legal notes; life assurance; descriptions of proprietary articles, patent medicines, etc.; instructions on first help to the injured, and dozens of other matters are tersely dealt with. The work contains barometrical charts, meteorological records, dietary record, temperature charts, cash book and expenditure accounts, occupying 36 pages, memoranda, a letter register, and a diary of 112 pages, all having interleaved blotting, and it contains fuller postal information, ready reckoning tables, and data of important events, than any diary we have yet seen. How all this can be produced, well bound, and sold for 1s. 6d., puzzles us.

"Health Notes for the Seaside," by A. C. Dutt, B.A., M.B., Cantab. (Horne and Sons, Whitby, 6d.). This little book contains chapters on dust, the hygiene of dress, exercise, baths and bathing, alcohol, tea, coffee, cocoa, etc., all well written. An that insanitary abomination—wall paper. Dr. Dutt says:—

"Papering and plastering the walls inside are most objectionable. The wall covering, like the floor, should be washable with soap. Paper and plaster both absorb moisture and organic impurities. Lincrusta is good, but very expensive; what are called Fisher's 'Permanent wall hangings' are washable, and comparatively cheap. Even the poorest can have their walls stained and varnished, which is a thousand times better than pasting one wall-paper over another, laden with micrococci and putrifying organic products. It is a mistake to suppose that only green wall papers may be tainted with arsenic; no colour can be declared safe."

That other abomination dear to English middle-class respectability, the carpet, meets with as little tolerance.

"As regards the floors, deal boards often shrink after being laid. To prevent this, parquetry, or tongued boards, may be used. Or the spaces may be plugged with wood, planed and polished, after treatment with bees-wax and turpentine. In this case, scrubbing will be quite unnecessary, as sweeping will be found adequate for cleanliness. Instead of having a large carpet nailed down, it is infinitely preferable to have a few small squares, artistically arranged."

There is great deal of sound sense in the advice Dr. Dutt gives holiday-makers on baths, bathing, etc.

CORRESPONDENCE.

THE POOR MAN'S FLOUR.

To the Editor of FOOD AND SANITATION.

SIR,—During the last few weeks my attention has been called to certain very small bags of flour, now being offered for sale by many of the shopkeepers in Birmingham, for which there appears to be a demand amongst the poorer classes of the city. Having examined the contents of some of these bags, I find they contain an article that is not of the nature or quality of flour; I have also seen a sample of dough made from this so-called flour. It had more the appearance of glazier's putty than dough, and when baked, resembled mortar more than pastry. It is, therefore, evident that these poor people are being systematically imposed upon, as when they ask for flour, they naturally expect to get wheat flour, and not a mixture. Now, sir, are not the vendors of these spurious mixtures liable to prosecution under the Adulteration Act?—which I maintain includes flour, just as much as other articles of food, such as butter, coffee, milk, pepper, etc. There-

fore, persons selling as wheat flour an article that is not of the nature and quality of wheat flour are just as liable to prosecution under the Act as persons selling any of the above articles of food; and if they label the article pure, and it is found to be not so, are liable to imprisonment, as it then becomes a felony. Where, then, are the inspectors, and how is it that some shopkeepers are continually being harassed over the sale of milk, butter, coffee, and pepper, while so many persons are allowed to offer for sale, under the name of flour, the vilest trash, without the slightest notice being taken of them, just as though the law was powerless to touch them? Why are not the vendors compelled to put upon these bags of flour that it is pure, or that it is sold as a mixture, similar to packets of coffee, etc., so that purchasers may know what they are actually buying, and so get what they really want—pure wheat flour?—Yours, etc.

A COMMERCIAL TRAVELLER.

Re COLMAN'S MUSTARD.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—In reference to this matter in your issue of December 14th, you will excuse me, I am sure, for being so rude as to flatly contradict your statements.

You state, "If Colman's Double Superfine Mustard does not mean pure mustard, we do not know what it can possibly mean." I must tell you, at once, it means nothing of the sort; in proof of which I enclose one of their labels of Double Superfine Mustard, and also some mustard taken out of the tin, and if you care to take the trouble to have it analysed, you will find mustard flour, turmeric, etc. Further on in your report, you state that this nonsense about wheat flour being necessary in mustard has been talked to death; and it is not the truth. Dear me, what will editors try to make people believe next! You should be a little more careful in your statements, for perhaps your own domestic servant could tell you better. I am quite certain that most of the public, by practical experience, know your statements to be absolutely untrue. Consult your own wife, if she mixes the mustard with water, what she has to say on the subject. Allow me to enlighten you on the subject, being a grocer of 30 years' standing. Messrs. Colman, like all other makers, manufacture four or five qualities, at various prices—the cheaper the kind, the more adulteration. They are called fine, superfine, double superfine, &c. Messrs. Colman make two kinds of best mustard; they are both called double superfine—one is pure mustard, the other is a mixture, as per enclosed—both being the same price. Now, I must tell you, from my own knowledge, nine-tenths of the people prefer the mixture; and why? Because the mixture keeps in better condition in the mustard-pot. If you doubt my assertion, please try both kinds separately. Pure mustard soon dries up and looks dark, and is more wasteful than the mixture. There is not quite so much bosh about the matter as you appear to think. Messrs. Colman are wise enough to provide an article that meets with the requirements of the people, and if anyone asks for pure mustard they can get it, but it does not give general satisfaction.—Yours, etc.,

A GROCER.

[As we happen not only to know as much about the grocery trade, but a good deal more about mustard than our correspondent, we may inform him that certain qualities of mustard seed do produce an article that behaves in the way he describes. Pure mustard, made from finest quality seed, does not require wheat flour, turmeric, or chillies, &c., and will give satisfaction; but it must be pure, and made from perfectly ripened seed.—EDITOR, F. AND S.]

ANSWERS TO CORRESPONDENTS.

ANXIOUS.—We will look into the peptonoid question.

E. B.—It is nonsense. You can get pure mustard from Champion and Co., City-road, London, E.C.

K. L. B.—We intend to examine some of the lager beers, and shall deal with them soon.

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Food and Sanitation.

SATURDAY, JANUARY 25TH, 1896.

UNHEALTHY FOREIGN HEALTH RESORTS.

WE pointed out last week that Mentone was simply a pesthouse inhabited by a disease-disseminating, emaciated, coughing, bleeding population, bestowing consumption upon the health or pleasure seeker.

Florence is in a sanitary state which, if known, is just calculated to entice English visitors. People who can afford high-priced table waters do not suffer from typhoid fever, but the disease is ever rife in the poorer quarters.

It has always been a mystery to us why so many thousands of our wealthy people flock to filthy foreign "health," etc., resorts, when England, Ireland, Scotland, Wales, the Isle of Man, and the Isle of Wight are really unknown to them. We have baths, natural mineral waters, enchanting scenery, excellent hotels and travelling accommodation in all parts of the kingdom. The Isle of Man is, for example, a poem in scenery. Its winter temperature is delightful, and its hotels spacious and many; but in the winter months it is a desert from the visitors' point of view. Why? Because our Court sets the fashion of going abroad, and because our self-abasement in regarding everything that is foreign as better than English has vitiated our taste and common sense. Will some new sensation society leader set the fashion of spending the money drawn from English people in deigning to look at Bettws-y-Coed, or the Vale of Avoca, or Glen Helen, Isle of Man, and the scores of other places well worth visiting, which want of space prevents our mentioning? Will the Prince of Wales set a healthy English fashion? There are Eastbourne, Bournemouth, Hastings, Ramsgate, Southport, Blackpool, Douglas, Killarney, Rothesay—scores of places where the ducks would flock were the drake to lead. For the Spa and mineral water seeker we have Malvern, Buxton, Cheltenham, Epsom, Leamington, Harrogate, Woodall Spa, Boscombe, Bath, Bridlington, Scarborough, Tunbridge Wells, Weymouth, etc., etc. The public are being dosed just now with a patriotic stinger, and they have realised what foreign friendships and gratitude means. It would be worth the while of English medical men to study our native health resorts more and to encourage foreign ones less. Money spent in England goes to better England's prosperity, that spent abroad goes to equip an army or a navy that may one day be busy blockading or bombarding us, and the next be shooting us with the latest inventions in rifles bought by English money, foolishly spent.

THE OYSTER SCARE.

WHAT have Colchester, Whitstable, Pimm, or Sweeting been doing to Mr. Ernest Hart? In the journal edited by that clever and pushing advertisement seeker, oysters and typhoid were served *ad nauseam*, but not a scrap of real evidence could be produced to justify the scare. Later the Stirling ball was seized on with avidity, but here, again, investigation showed that the insanitary stupidity of the ball caterers was to blame, and that there was about as much sense in proclaiming oysters dangerous to health on account of the Stirling accident as there would be in condemning tweed cloth because persons contracted disease by wearing suits of clothes made by some sweated tailor in a disease-infected den.

We now have the *British Medical Journal*, saying:—

"OYSTER POISONING AT THE CAPE.—It is reported that on Saturday, December 1st, 1895, the usual banquet was given by the 'Brither Scots' at the Phoenix Hotel, Cape Town, at which eighty persons sat down. The proceedings were convivial, jubilant, and enthusiastic, but nearly everybody suffered severely the next day, and the cause was considered to be the Delagoa Bay oysters which were consumed at the dinner."

They have been very short of water lately in some

African places, and these "Brither Scots" may have imbibed some fancy-named mineral water "made in Germany" which is sold to the public, recommended by many medical men, at something like *one thousand times its value*. It is thought by some that Mr. Ernest Hart is not entirely unconnected with this water. Suppose that oyster dealers were to raise a "made in Germany" cry, or to retaliate by showing that analysis of this water proves the claims made for it to be exaggerations done for trade purposes—they would but be treating some oyster scareologists to a yard of their own measure. The president of the Royal College of Surgeons is better qualified to give an opinion on oysters than is Mr. Ernest Hart, and he expressed that opinion pretty plainly at a recent banquet given by the Curriers Company, where, in consequence of the rubbish about oysters, the timorous curriers had tabooed them.

Their absence was commented upon by Mr. Napier Higgins, Q.C., and his remarks elicited the response from the President of the Royal College of Surgeons that if Mr. Higgins would invite him to "Sweetings," he would be pleased to eat as many oysters as he (Mr. Higgins) would care to pay for.

We don't understand this new attempt to create an oyster scare, unless Mr. Hart is trying to get up a "corner" in whelks.

MILK—ITS COMPOSITION AND VARIETIES.

MAGISTRATES are so puzzled, and no wonder, over the conflicting statements made in adulteration cases that there is need of real knowledge as to what is milk. Upon this question the Englishman who revolutionised milk analysis and taught the world accurate methods of determining the fat in milk, in speaking upon the principles involved in milk analysis has naturally something to say that is useful. With his last report Dr. Matthew A. Adams contributed a valuable *résumé* of this question. Dr. Adams said:—

"Milk is a watery fluid, containing from 11½ to 13½ per cent. of solid matter, consisting of two sorts of material:—

"One sort of the nature of fat, which is insoluble in the water of the milk; the other of a kind that is not fat, and which is soluble.

"With milk, as with all other secretions, the relative proportions of its constituents is not a fixed quantity, it is subject to a range of variation just as, for example, man varies in stature, and in the same way as there are limits to the variation in the human stature, so there are limits to the variations in milk.

"Naturally, the first and most important business in the application of analysis to the discovery of fraudulent adulteration is, to ascertain beyond all possible doubt, what the relative proportion of the several constituents in genuine milk may be, that is to say, of the water, total solids—solids not fat, and fat.

"To furnish this information, vast labour has been bestowed, systematic analyses of milk produced under every conceivable condition of breed, age, period of lactation, food, climate, period of the day of milking, for milk derived from individual cows and from the mixed produce of dairies, in every variety of circumstances that the wit of man can suggest; one set of researches, the best extant, embrace the analyses of no less than 120,540 separate and distinct samples; another, instituted by the Government Department at Somerset House, 328 samples. These latter, having been executed with the express object of supplying justices with data for their guidance in the exercise of their functions in relation to the Food and Drugs Act, the results of these remarks are practically identical, and have once for all settled:—

"I. The average composition of milk to be in parts per cent. as follows:—

Fat	4.1
Solids not Fat ..	8.9
Total Solids ..	13.0
Water	87.0
	100.0

"II. The range of variation from the average under all possible circumstances and conditions of breed, age, period of lactation, diet, climate, etc:—

"(a) For single individual cows

	Maximum.	Minimum.
Fat	5.91	2.43
Solids not Fat ..	9.83	7.52

"(b) For dairy samples, being the mixed produce of a number of cows—

	Maximum.	Minimum.
Fat	5.61	2.89
Solids not Fat ..	9.70	8.40

"Naturally enough, extreme departures from the average are exceedingly rare. In the case of the fat, for example, which is by far the most variable constituent, only 2 per cent. of all the dairy milk that can possibly be found yield less than 3 per cent. of fat, and not one less than 2½ per cent., so that analysts and justices alike may rest assured in this belief, and act with the utmost confidence in the certain knowledge that a dairy milk with less fat than 2.89 per cent. must have been deprived of a portion of its cream.

"Applying these facts to the recent case before the justices for the 'Home Division,' it will be seen that there should not be the shadow of a doubt but that the milk in question had had a portion of its cream removed. As given in evidence, this particular milk was a part of the mixed produce of a dairy of twenty-six cows, four at one farm, eight at another, and fourteen at a third; it yielded 2.09 per cent. of fat. If, therefore, the milk was originally of average quality, it must have been robbed of exactly the half of its cream—(I certified 25 per cent. abstraction).

"To minds trained to these kind of observations, figures like these are of themselves absolutely conclusive. It is not, however, required of everyone to deal with problems of this nature in the abstract. I, therefore, beg to be allowed to illustrate the position by a parallel that may appeal more directly and forcibly to the imagination.

"At the commencement of these remarks, a comparison was made between the variations that occur in the composition of milk and those that occur in the stature of man. Allow me to develop the simile.

"The average stature of man in Britain is 67.66 inches—say, 5ft. 7½in.; about 4 per cent. range from 6ft. to 6ft. 3in., and a like proportion from 5ft. to 5ft. 3in. We all know how rare it is to find an adult man only 5ft. high, and one 28 per cent. less than 5ft.—that is to say, 3ft. 7½in.—would indeed be a curiosity; and, for the life of me, I cannot imagine a farmer in East Kent having in his employ twenty-six adult labourers of such diminutive stature that, taken together, they averaged only 3ft. 7½in. a-piece; yet such is a strict parallel of what the justices were brought to believe when they dismissed the case of milk adulteration, No. 23, Home Division."

Unfortunately for the public, dairy farming facts like the above are but little known, and the consequence is that we have cases like that recently heard at Clerkenwell, London.

An Inspector under the Sale of Food and Drugs Act took a sample of milk in the parish of Clerkenwell. The sample was divided in the usual way, and a portion submitted to the Public Analyst, who certified that the milk was deficient in fat to the extent of at least 54 per cent. The actual amount of fat present in the milk was stated to be 1.36 per cent. The vendor was summoned to appear at the Clerkenwell Police-court, on December 18th. The defendant's solicitors did not dispute the analysis, but submitted that the milk had not been tampered with, and called evidence to the effect that the sample was a portion of the first three pints milked from a cow. The cream rose to the top in the udder, and thus accounted for the deficiency of fat. He suggested that the cow should be milked in the presence of the Inspector, and the milk analysed. The Magistrate adjourned the case for 14 days for the prosecution to produce scientific evidence to rebut the defendant's statement. The Inspector, a few days after, visited defendant's cowshed, and saw a cow milked (said to be the same cow from which the previous sample was taken), taking a sample when three pints had been drawn; he also took a sample after the cow had been milked dry. Both these samples were submitted to the analyst, with the result that both samples were certified to be genuine milk of good composition, the actual percentages of fat being 4.02 per cent. and 4.28 per cent. respectively. On January 1, at the adjourned hearing these facts were proved, and again the analysis was not disputed. The Magistrate, however, again adjourned the case for the defendant to produce evidence that the first milking from a cow was deficient in cream. At the adjourned hearing on January 15, two cow-keepers gave evidence that they knew the first milking was deficient in cream, but neither could say to what extent, as they had never had any analysed. Not-

withstanding the evidence of the Analyst and Inspector, the Magistrate, Mr. Horace Smith, dismissed the case, saying that he was not satisfied the defendant had tampered with the milk."

This is a clear case of making the cow a party to driving a coach and four through the Acts. The public expect average milk, not a product from some wretched animal that ought not to be milked, but pole-axed. A decision like this of Mr. Horace Smith says little for that magistrate's intelligence and fitness to try adulteration cases.

EARLY RISING.

THE indefensible and unhealthy practice of leaving one's bed until the day is well aired has received another exposure.

Dr. Selden H. Talcott, New York, has recently called attention to the relative frequency with which farmers and their families become insane. Dr. Talcott believes that insanity among the bucolic class of the population is mostly due to the inhuman hours at which they are in the habit of getting up.

To those who remember the shivering little children who were dragged out of bed at 4.30 or 5 a.m. and sent to trudge through sleet and slush to the mill, where they worked for longer hours than even did South American slaves, the fiendish cruelty of the philanthropists who at chapel and Sunday-school proclaimed the wisdom of the wretched doggerel that—

"Early to bed and early to rise,
Makes a man healthy, wealthy, and wise,"

even now arouses feelings of passionate indignation. But this early-to-rise folly has somehow come to be regarded as a virtue instead of a pernicious practice. It is only the other day that a London daily paper eulogised a Mr. S. R. Crockett, novelist, because he rose at 4 a.m. or some such ridiculous hour. We do not know Mr. Crockett's novels, but if they are on a par with his early rising aberration, we do not feel that we have suffered any great loss by leaving them unread.

DISGUSTING REVELATIONS *re* THE POTTED MEAT TRADE.

At the Thames Police-court, on January 17, Messrs. John Munro, Alexander Munro, and Albert Munro, potted meat manufacturers, of 42 and 42A, Ocean-street, Stepney, appeared before Mr. Dickinson to answer adjourned summonses for having in their possession a quantity of potted meats which were unwholesome and unfit for human food.

Mr. Muir, barrister, instructed by Mr. Milner Jutsum, clerk to the Mile-end Vestry, prosecuted; and Mr. George Hay Young defended. At the opening, the summons against Albert was withdrawn.

William Barston, mat-maker, stated he had noticed a rotten smell coming from a stable belonging to the defendants at St. Thomas's-yard. He had seen there a "rare stock" of cases of tinned meats. He had complained to Dr. Taylor, the medical officer, about the smell. He had seen meat carted there in van loads, and he had seen it carted from the stable to 42, Ocean-street. He had also seen two girls opening the tins and stirring something. He had not detected any smell at the stable since October.

Mr. A. C. Perrins, principal buyer to Messrs. Sartin and Co., wholesale grocers, of Fenchurch-street, City, deposed that he had about eight years' experience of tinned meats, and bought 10,000 to 12,000 cases a year. It was the practice to sell tinned meats, for human food, without there being any labels showing who were the makers. He had seen an invoice showing that five cases of corned beef had been bought at 12s. a case, but he should say that good meat could not be bought at less than 15s. or 16s. a case. Even then he should not care about having any at that price. His firm had dealt with "Palmer's (Limited)," and had sold potted meats and soups for them. A great deal more of Palmer's goods came back as rejected or bad than from other manufacturers. In 1895 his firm in all were supplied with 1,482 gross of tinned meats from Palmer's, and 83 gross were returned as bad. His firm had now ceased selling those goods. Tinned goods should keep easily for a year. His firm had received a letter from Munro's that they could not credit goods after three months.

By Mr. Young: The letter came from "Palmer's," and they recognised that as a firm. He could not swear they had received back one tin of those which had been delivered since the 26th July, which was the date of the registration of Palmer's (Limited). It would not be to the interest of the company to send out bad tins, as they were always allowed

for. The greater portion of the returned were probably delivered before July.

Mr. W. C. Young, an analytical chemist, of 19 and 20, Aldgate, deposed that he was public analyst for several parishes. He had large experience of animal matter in various stages of putrefaction, and was acquainted with the chemical changes which took place in such matters. He had heard Dr. Taylor's evidence, and should say the meats seized were absolutely putrid and quite unfit for human food. He knew of no process by which such meat could be made fit for human food, and the process described as having been adopted by the Munro's would not render it fit for human consumption. That applied to all the meats. In his opinion, if meat was mouldy on the top it would be extremely dangerous to use it for human food, as it was possibly poisonous.

For the defence, Mr. Young submitted that the prosecution had failed to make out any case against the two remaining defendants. It had been proved at the time the goods were seized the business was carried on by Palmer's Company (Limited). If anyone was responsible, it was the company to whom the goods belonged.

Mr. Dickinson said he should send the case to a superior Court to decide, and the defendants would be committed for trial at the Central Criminal Court.

ITALIAN, AUSTRALIAN AND FRENCH WINES.

MR. EGIDIO VITALI says:—

The sales of Italian wines in England have, during the last twelve months, held their own so far, and without doubt the popularity as regards public demand of some qualities, and Chianti in particular, has been most noticeable.

Italy is most anxious to secure a good foothold in England and with the export trade with the Colonies. Indeed, special efforts are constantly being made to ship wines suitable to the British palate, and great reserves are held in order to keep the uniformity of supplies. In all countries public taste for food and beverage varies. Of this all Italian wine-growers are fully aware, and are making all possible efforts to ship wines likely to please. The present extension of Italian vine-growing is very large, and agriculture is greatly dependent on it, so that it is to be hoped the trade of Italy with Great Britain will assume even more important dimensions in years to come, to the mutual advantage of both countries.

We echo Mr. Vitali's hope, for we have found a good drop of Chianti, for example, to be obtainable at only two places in London. We can understand the sore straits of the Italian troops in Africa, if they took Italian wines with them of the character we have encountered in this country. Persistent indulgence in vinegar, as a beverage in quantities, must ruin any stomach.

Australian wines claim considerable ferruginous value.

The consumption of Australian wine in England appears to be steadily increasing. The matter was taken seriously in hand by the Government of South Australia in 1894, and in that year over 10,000,000 vines were planted. In that year also the Colonial Government established a bonded depot in London, to which the wines could be consigned, and where they could be matured before being placed on the market with what is practically a Government guarantee. No less than seventeen hundred hogsheads of this beverage were imported into England in the year which has just closed, and our colonial cousins look forward to a large increase in the current year. The total import for last year, it may be mentioned, contributed nearly £5,300 to the Customs.

If our Colonies can produce wines that will satisfy this country and command a large sale, they have a first claim on our attention; the more so as the falsification of French and German wines is universal.

The United States Consul at Havre, Mr. C. W. Chancellor, has recently reported on French wines. "The grape," says Mr. Chancellor, "is not necessarily an element in the production of wine. We commonly describe wine as the fermented juice of the grape, yet it is not always so, for much so-called wine is perfectly innocent of any acquaintance with the product of the vineyard. Recently the director of the municipal laboratory of Paris, whose function it is to detect adulterations of foods and drinks, caused 15,000 casks of so-called wine to be seized and destroyed. The official analysis could not detect in the whole lot a single drop of grape juice; but what it did detect was water, alcohol, sulphate of gypsum, glycerine, salts of potash, and berries for colour. It is a significant fact that whenever the French vintage is poor it has been found that immense quantities of sugar, amounting in 1887 to upward of 56,000 tons, have been used for mixing with the wine, while the deficit in the production of the vineyards has been in a measure made good by the making of many millions of gallons of wine, so-called, from raisins, currants, and the lees of the wine-press. Sweetness in wine covers a multitude of defects without improving its quality, yet many persons insist on giving the preference to sweet wines, with the result that acidity and indigestion are sure to be produced, and these, sooner or later, are followed by rheumatism and gout."

MORE "EXPERT WITNESSING."

THAT little observation of the Master of the Rolls that there were three kinds of liars—"liars, damned liars, and expert witnesses"—was not long ago corrected by a witty Solicitor-General, who claimed that there were four classes, the three enumerated by the Master of the Rolls and "My friend, Sir——." We not long ago had salicylic acid in British wine blessed by a distinguished band of *savants*, no doubt greatly to the benefit of the health of the children whose parents treat them to the drug *plus* mystery. A little before that, alum, in baking powder, was declared holy and wholesome, and now we are told copper in peas is heavenly. Thus, every day brings its surprise, testifying to the altruistic efforts of the expert to uproot foolish notions. We do not despair of living to the time when the expert will prove to an admiring court that prussic acid is a maligned article and never injured anyone, but in the meantime we are pleased to be able to assist our readers' education upon copper in peas.

At Southwark Police-court, on Jan. 15, a case was part heard before Mr. Fenwick, with regard to the alleged injurious effects of the use of copper sulphate in the preservation of vegetables. The case was that of A. A. Grist, Sanitary Inspector of St. Saviour's District Board of Works, against Mr. H. C. Summers, trading as George Mence Smith, at High-street, Borough, and also many other places, for selling preserved peas mixed or coloured with an ingredient injurious to health, viz., 8/10ths of a grain of copper per pound of peas, whereby the defendant became liable to a penalty of £50.

Mr. Frank Dodd, barrister, who appeared for the parish, stated that the summons was taken out under Section 3 of the Adulteration of Food and Drugs Act, 1875. The question to be decided was whether or not some preserved peas sold by the defendants were so coloured or stained as to render the article injurious. From the analyst's certificate it appeared that the quantity of metallic copper found in the peas was equal to 3/16 grains of sulphate of copper per pound of peas. He contended that chronic poisoning might result from a constant use of the peas. The chief object in introducing the copper into the peas was to give them their original green colour.

Mr. A. A. Grist was called, and stated he was the Sanitary Inspector for the St. Saviour's District Board of Works. On Sept. 4 he sent his daughter into the defendant's shop for a bottle of preserved peas. When he had received them he returned to the shop and informed the defendant that they were for the purposes of analysis, and divided them in the usual way. He produced the analyst's certificate.

Miss Margaret Grist, daughter of the first witness, gave evidence as to procuring the peas.

Mr. Bodmer, public analyst, stated that he had examined the peas, and found copper to the extent of 8/10ths of a grain to a pound of peas. The 8/10ths of metallic copper would amount to 3/16 grains of sulphate of copper. Witness not being a medical man was unable to give an opinion that the copper would be injurious to health.

Mr. Bonsey, barrister, who appeared to defend, cross-examined at great length, and during the cross-examination it was stated that in Paris in 1882 the Board of Health put restrictions on the use of copper in preserving peas and other vegetables, but in 1889 the French Government took off the restrictions. The peas in question were called *petits pois Anglaise*. Mr. Bonsey also referred the witness to several authorities, all of whom consider that the small amount of copper introduced is not injurious to health.

Evidence was also given by Dr. Leonard Wyld, M.R.C.S., Medical Officer to the Bedfordshire County Council; Dr. F. J. Waldo, Medical Officer of Health, St. George the Martyr, Southwark; Dr. Somerville, and Dr. Herron, Medical Officer of Health, St. Saviour's, all of whom expressed an opinion that the use of preserved peas coloured with sulphate of copper would be attended with injury to health.—Mr. Bonsey, in cross-examination of the witnesses, produced several books written by eminent doctors, whose opinions differed from those of the witnesses.—The case for the prosecution was then concluded.

Before counsel addressed the magistrate for the defence, it was agreed to take the evidence of Dr. Burney Yeo, Physician to King's College Hospital, who gave his opinion that the amount of copper present in the peas would not be injurious to health.

Reference was made in the course of the proceedings to a previous adjournment of the case which had been taken for the purpose of procuring an analysis at Somerset House. It appeared that the result of that analysis had now been received, and that it showed only 4/61 grain of copper as against the public analyst's certificate of 8/10ths of a grain. On inquiry, however, it appeared that this analysis might have been somewhat vitiated by the fact that the sanitary inspector conveyed the material to Somerset House in a tin vessel. The inquiry was again adjourned.

Upon the addition of drugs to foods, the *British Medical Journal*, of January 11, joined us in our objection to Mr. De Rutzen's decision, saying that it "is one of considerable importance, owing to the influence it must inevitably have on the administration of the Food and Drugs Act. It was shown that a British wine contained 266 grains per gallon of salicylic acid. It was stated in defence that the drug was used as a preservative, and in a quantity so small that it could not be injurious to health.

Evidence to the effect that even in small doses the drug might be injurious was given by Dr. Corfield (the Medical Officer of Health), and Mr. Cassal (the Public Analyst) for St. George's. The magistrate, however, accepted the evidence to the contrary effect, and held that the addition was not injurious to health, and seemed to imply that such addition, if made in quantities designed merely to obtain an antiseptic action, and not to increase bulk or conceal inferior quality, would prevent conviction under the Act. We believe that Dr. Corfield, in saying that the long-continued use of small doses of this powerful drug may be injurious to health, has on his side the support of medical experience and opinion. The decision is greatly to be regretted in the interests of public health, more especially as it offers a new excuse to vendors who may wish to add various drugs to their foods and beverages 'for antiseptic purposes.'

We are becoming very weary of so-called "expert witnesses" for adulteration defences. A few recent cases show clearly that there is strong need for some action being taken to check the abuse.

THE LATEST PHOTOGRAPHY "MADE IN GERMANY."

THE *Standard* has caught the photographic fever very badly. In giving what purport to be further details of the remarkable scientific discovery made by Professor Röntgen of Würzburg University, it says:—

The Professor came upon his discovery quite by accident. He was experimenting in the dark with a Crookes' vacuum tube, which was covered with some sort of cloth. A strong electric current was passed through it, while close by there was some prepared photographic paper but no camera. On this paper the professor noticed next day several lines for which he could not account. By restoring exactly the circumstances as they existed on the preceding day, he was able to ascertain the real origin of these mysterious marks. He continued his experiments with the Crookes' tube and photographic paper, and found, in the first place, that not only may a camera be dispensed with, but that the image from the light rays of the Crookes' tubes is not obtained if it has to pass through lenses.

By the use of these rays photography is immensely simplified. There is the vacuum tube; in front of it is the object to be photographed, and immediately behind it is the prepared paper, in a wooden case, wood being transparent to these rays. An ordinary plate, whether wet or dry, must not be exposed to daylight until after fixing, because the ordinary light rays would act upon the silver or other compounds. But in the case of the Crookes' rays this difficulty does not exist, because the sensitised paper can be left in the wooden case, and, therefore, in complete darkness.

That, however, is not all. The Professor found that these peculiar rays are not refracted, which is the reason for the inapplicability of lenses or the camera, and he further found by experimenting that they develop no heat, and that they are without any influence upon the most sensitive magnetic instruments. He also discovered that these rays possess this extraordinary peculiarity—that they do not travel in undulating waves, but by moving forward in a direct line. The theoretical interest attaching to this last peculiarity, if it be confirmed, is enormous. The first photograph of a human hand, showing only the bones and the rings on the fingers, was obtained by the Professor placing his own hand on the wooden case with the prepared paper, and allowing the rays from the Crookes' tube to fall directly upon it.

There are already nine different Crookes' tube photographs in Vienna—the majority in the keeping of Professor R. Boltzmann, of Vienna University. This eminent Professor of Physics declares that the discovery of this "new light," as he terms it will form an epoch in the history of science. He says that there are still certain obscure points that require clearing up; but on the whole, he is not sceptical. The repetition of the experiment, however, has not yet been successful in Vienna; but this, it is said, is because the Crookes' tubes at the disposal of the experimenters here were not sufficiently large."

A correspondent of the *Standard* observes, in confirmation of Professor Röntgen's discovery, that he and a friend "have obtained distinct proof that the radiations in question do pass easily through various substances that are quite opaque to ordinary light, and do produce strong impressions upon ordinary photographic plates entirely incased in light-proof material. Indeed, all substances that we have so far experimented on in this laboratory appear to be transparent to these radiations, even sheets of ebonite, carbon, vulcanised fibre, copper, aluminium, and iron, though there is considerable variation in degree."

A later report states that Professor Klupathy, of the Physical Institute at the University of Pesth, has repeated, with very satisfactory results, the experiments made by Professor Röntgen. He was able to obtain pictures on a photographic dry plate enclosed in a wooden case, and has likewise photographed a larger part of the human body than the hand, obtaining pictures of the bones only, without their fleshy covering.

Professor Röntgen has sent rays of the new chemical light through aluminium plates of one and a-half centimetre in thickness, and they went as clean through as if the substance had been wood.

The same was the case with two sets of books, including many volumes. These he placed between the Crookes' tube and an ordinary compass; behind them was the wooden case with the dry plate, and the result was as complete a photograph of the compass as possible. It is, perhaps, not strictly a photograph in the ordinary sense, because no lenses are used; it is not a negative, but a positive plate that is obtained. Hence some people are inclined to call such a figure simply the shade of the object. It has not, however, up to the present, been found possible to get such a shade fixed.

This is another injustice to that great and good man, W. T. Stead, English pioneer of the Mattei Quack Cancer Cure Swindles, "spook" photographer, and custodian in general of the world's morals and politics. Here we have the press praising a German who cannot claim more than to be able to photograph objects that really exist, and having no word of eulogy for Saint Stead, who has again and again recorded how non-existent things can be photographed. If anything be calculated to make us feel small it is that for years Stead has been absolutely without honour in his own country. But it may, for aught we know, be the same with Röntgen in Wurtzburg.

A ROD IN PICKLE FOR DISTILLERS.

THE *Popular Scientific News* says that the recent discovery of Mr. Wilson, of acetylene gas from lime and coal dust treated with electricity from carbon electrodes, has made it possible to produce ethyl alcohol so cheap that all other processes will be abandoned. Should this discovery prove to be what is expected, alcohol will be made for two or three cents a gallon, or even less. Its use in the arts will be largely increased, and as a beverage it could be cheapened to an enormous extent. The occupation of distilling will be superseded, and the manufacture of whisky and other alcoholic beverages will change, and the great problems which centre round them commercially, scientifically, and socially, will have new features.

My, but we hope to be found, for a long time to come, studying the new features of great problems tempered by an occasional intimacy with a little old John Jameson. We don't hanker for lime or coal-dust, any more than we do for Indian corn or potato spirit masquerading as "Special Scotch," and we are not madly anxious either to test that other invention of M. Riviere and Bailhache, who have been investigating the possibility of obtaining pure ethylic alcohol from *Asphodelus remotus* and *Scilla maritima* by fermentation. They experimented with pure cultivated wine yeasts. They have previously shown that, by the aid of such yeasts, it is possible to obtain alcohol of good flavour without rectification, from beet root juice or malted grain. The alcohol obtained from the asphodel and squill is described as being of equally good quality, and the investigators think its manufacture from these sources may constitute a profitable industry, especially in Algeria and Tunis, where both plants grow wild and in abundance. We therefore make public a further series of scientific results that are admirably calculated to suit every possible degree of sophisticated turpitude. Our distillers, we fear, will shortly be found mournfully droning, "We've got no work to do." Well, the mills of the gods grind slowly, and there may be a poetic justice in this, for the distillers have caused English grain growers to miserably chafe that refrain for years past. Should, therefore, unmerciful disaster overtake our lords of the potato, starch, indian-corn, sugar, and damaged fruit, they will find few who would like to see England's soil producing sufficient food for England's requirements, disposed to join in lamenting the decay of distilling, for in the main our distillers have been and are unpatriotic boycotters of English, Irish, or Scotch produce in favour of the German potato spirit, and the nigger who produces rice, sugar, etc. We have for years shown how mad is this policy of allowing our acres to go out of cultivation, and of relying for our food supplies upon foreign nations, and we hold those who boycott native industries as enemies of England deserving of opprobrium rather than sympathy.

HOW THE ADULTERATION ACTS ARE WORKING.

DOVER received a *nil* report from its analyst, so milk rogues and others have a profitable time there.

WINSOR has everything genuine, which may be because the surveyor buys the samples. The shopkeepers like this estimable gentleman so much that they sell him nothing but pure stuff. He reported:—

"On March 20 last, I forwarded one sample of tea, one of coffee, and one of sugar to the Borough Analyst to be analysed, and he reported that the samples were genuine. On June 7 last, I also forwarded one sample of milk and two of beer to be analysed, and

the analyst reported that these samples were also genuine. On September 28, last, I also forwarded one sample of coffee, one of bread, and one of sweets, to be analysed, and the analyst reported that these samples were also genuine. On December 14 last, I forwarded a sample of gin, one of rum, and one of whisky to be analysed, and the analyst reported these to be genuine. I forward herewith Mr. Midwinter's twelve reports on the samples sent him.—THOS. V. DAVISON."

Mr. Soundy asked if the surveyor purchased the samples himself, and the surveyor replied yes. Mr. Soundy said that, with all due respect, he hardly thought that the wisest course for the inspector to carry out; for, holding an official position, people would supply him as well as they could. It was satisfactory to the town, still, if they wanted to catch any evil-doers, it was not the wisest course for the surveyor to make the purchases.

Mr. Reavell remarked, if the surveyor required, he would buy the whisky and gin for him next time. (Laughter.)

ST. SAVIOUR'S BOARD OF WORKS HAS A REPORT FROM MR. R. BODMER, THE ANALYST.

MR. R. BODMER, the analyst, reported that during the quarter ending December 25 last, he had received from the board's inspectors and analysed 49 samples of food and drink, of which only two were adulterated. One of these was a sample of preserved green peas, which Mr. Bodmer said contained copper in the proportion of 0.8 grain to the pound, equivalent to 3.16 grains of sulphate of copper to the pound of peas. This was, in his opinion, sufficient to render the peas unwholesome, if not actually injurious. Proceedings were pending in this case.

ESSEX.

MR. T. A. POOLEY, the county analyst, reports for the last quarter the lowest percentage of adulteration under the Food and Drugs Act that he has ever had to record. The practice of diluting milk still continues prevalent, in one instance as much as 37 per cent. of added water having been detected. A quantity of lemonade examined in one case contained a small quantity of lead—probably derived from the syphon containing it—and as this is an extremely poisonous metal, proceedings are pending. During the last year, Mr. Pooley analysed 660 samples under the Act, and 67 of these—that is 10.1 per cent.—have been certified as adulterated. There has been a decided improvement in all districts, and the percentage of adulteration has fallen to a figure lower than the one recorded by the Local Government Board for the whole of England and Wales. Considerable improvement in the purity of butter, coffee, mustard, and spirits is shown, but the adulteration of milk and lard has slightly increased. With the exception of the one sample of lemonade referred to, Mr. Pooley has not detected any constituent which can be described as directly "injurious to health," so that the public are now no longer poisoned, but cheated, and that to a much less degree than was the case a few years ago.

THE SUPPRESSION OF ADULTERATION.

MILK.

At Worship-street, on January 16th, Owen Morris, dairyman, of Lisbon-street, Bethnal-green, was summoned by Frederick Lyon, food inspector for the parish of Mile-end, for having sold as skim milk an article adulterated with 14 per cent. of added water.—Mr. Margetts, solicitor, defended.—The evidence of the inspector showed that the milk was purchased of a boy who was vending it in the street on behalf of his master. The boy behaved in a very impudent manner, and at first refused to sell to the inspector. When he did so he said it was sold as skimmed milk. The analysis, however, described the sample as being 86 per cent. "pure milk," and the residue, 14 per cent., "added water."—Mr. Bushby asked if the article so described was inferior to "skimmed milk."—The inspector admitted that it would be richer and better, but the addition of water was the offence.—Mr. Bushby doubted if such a sale could be said to be "to the prejudice of the purchaser."—Mr. Margetts said the boy was sent out with pure milk, and there was every reason to believe he had adulterated it.—Mr. Bushby decided that in the absence of proof that the article sold in this instance was inferior to "skim milk" he ought not to convict, and he dismissed the summons.

At Leeds City Police-court on January 20, before the Stipendiary Magistrate (Mr. C. M. Atkinson), John Carter, farmer, of Pigeon Cote Farm, Seacroft, near Leeds, was summoned by Mr. Walter Burgess Walker, Inspector of Food and Drugs, for supplying milk adulterated with 15 per cent. of added water. Defendant, who had been twice convicted of a similar offence, was represented by Mr. Carter (Messrs. Carter, Ramsden, and Carter). A fine of £10, including costs, was imposed.—George Austin, farmer, Seacroft, was charged with having supplied milk adulterated with 23 per cent. of added water, and also with supplying milk on another occasion adulterated with 20 per cent. of added water. Mr. Atkinson imposed a fine of £5, or fourteen days' imprisonment, in each case. Mr. Harrison (Town Clerk) prosecuted in both instances.

At Paisley, on January 20, George Sharp, dairyman, West Fulton, Kilbarchan, was, at the instance of Mr. W. W. Kelso, sanitary inspector for the burgh of Paisley, charged with having, on the 27th December, sold two pennyworth of sweet milk which contained 13 per cent. of added water. He pleaded guilty, and was fined £5 with the alternative of 14 days' imprisonment.

BUTTER.

At Widnes, on January 16, Martin Rossiter, 59, Lugsdale-road, was

summoned under the Food and Drugs Act for selling adulterated butter.—Inspector William J. Parkinson, appointed by the Royal Agricultural Society in conjunction with the Lancashire County Council, said the butter was marked 1s. 2d. a pound. The county analyst certified that it contained upwards of 21½ per cent. of water. In bottling the butter for analysis it broke up in consequence of the presence of such a large quantity of water, and the inspector estimated that in putting the butter in the bottle he lost between six and eight per cent. of the water which the butter contained. The defendant gave evidence, and produced an invoice proving that he purchased 21½ lb. of butter on December 13, from J. Simcock, Dial-street, Warrington, for which he paid 11½d. per lb. Defendant swore that this was the butter of which the inspector had purchased a sample, and that he had sold it just as he had received it from Simcock. The Bench inflicted a fine of £2 and £1 costs.—The Chairman said the Bench did not consider the defendant was to blame, but were of opinion that he ought to make a claim against Simcock. Defendant: I cannot pay at present. Mr. C. H. Lewin (deputy magistrates' clerk): Perhaps Mr. Simcock will pay if he is in court, and save costs. Mr. Simcock then came forward and paid the £3, and asked if he could not make a claim against his wholesale dealer. Mr. Lewin: You had better consult your solicitor.—Councillor David Wright, grocer, of 44, Warrington-road, was also summoned under the Margarine Act, 1887, at the instance of William J. Parkinson, for exposing for sale unlabelled margarine. The offence was admitted, but Mr. Knowles stated in defence that when the inspector called the label was being washed. The Bench were of opinion that a technical offence had been committed, and fined defendant £2 and costs.

THOMAS KREGAN, Hulme, was, on January 14, charged by Inspector Keys, who said that he took a sample of some butter delivered by the defendant at a shop in Cornbrook-street on December 9, which upon analysis was found to contain 13 per cent. of water, and 45 per cent. of fats other than butter. In reply to Mr. Innes, who defended, Mr. Keys said that the defendant did not say it was margarine. He would not say that he described it as butter. The defendant was only in a small way of business. Mr. Innes said that they would admit the offence. There was no misrepresentation, and he asked for a small fine. John H. Baron, grocer, of Cornbrook, who ordered 12 lb., said he believed the article to be pure butter. He had done business with the defendant previously. Mr. Yates, the stipendiary magistrate, said it was the small shopkeepers who suffered. The defendant had been making great profits by selling an article worth probably 4d. or 6d. for 11d. per pound. If the defendant had been in a larger way the court would have inflicted a much heavier penalty. He would have to pay £10 and costs.

SPIRITS.

At Otley, on Jan. 18, Caroline Pottage, Bay Horse Inn, Baildon, was summoned by Mr. A. Quinlan, inspector to the County Council under the Food and Drugs Act, for selling whisky 38.8 degrees under proof, and gin 36.8 under proof on Dec. 17. The defendant pleaded guilty.—A fine of 10s. was imposed in respect of the whisky, and 5s. in respect of the gin, with costs in both cases.

At Bromley, James Goodwin, grocer, High-street, St. Mary Cray was summoned. Mr. Roberts, solicitor, of Exeter—acting for the bottling firm—appeared to defend. Defendant pleaded not guilty. Harry Chae-y, Inspector of Food and Drugs under the Kent County Council, said that on the 6th of December last he visited defendant's shop in High-street, St. Mary Cray. He purchased several articles and seeing a sealed bottle purporting to contain brandy, he asked the price of it. On being told the price was 1s. 11d. he said, "I'll take that bottle." He then told the defendant it was for analysis and asked him to accept a sample. Witness divided the liquid into three parts, leaving one part with the defendant, retaining one himself, and personally taking one part to the public analyst, at Maidstone, whose certificate, (produced) stated that the sample submitted was two degrees below half-proof. The capsule on the bottle said the contents were sold as half-proof spirit.—Cross-examined by Mr. Roberts: The bottle was in exactly the same condition when he bought it, with the exception of the capsule over the cork, which was now broken. It was uncovered and the label on it plainly to be seen. He did say "I'll take that bottle" when he purchased it.—James Card, assistant to the Inspector, said he was in company with last witness on the day in question and witnessed the division of the brandy.—For the defence, Mr. Roberts submitted that he had no case to meet. The Inspector said, "I'll take that bottle," and he had it. In a decided case it had been held that as a man asked for a pint of milk, and was served with some from which the cream had been abstracted, there was no case, for the purchaser got what he might reasonably expect to get in response to a very general request.—The Bench, acting on the advice of the Clerk, said they were of opinion that that technical point was fatal to the prosecutor's case.—Some discussion took place as to what was "proof" and "half proof" spirit, and on this point the inspector declined to commit himself to any statement. He purchased the brandy, he said, on the strength of the capsule, which said "half proof," and now the analyst's certificate said that the contents were two degrees below that standard.—Mr. Roberts held to the technical point, but pointed out that even on its merits the case must fail, as a label on the bottle said "54 below proof," and all that the analyst's certificate stated was that the brandy was "two degrees below half proof," or two degrees stronger than the label asserted that it was.—The Bench dismissed the case on the technical point, but declined to allow costs on the ground that it was "their custom never to allow costs in such cases."

At Eastbourne, on January 20th, George Luck, landlord of Ship Hotel, Meads, was summoned for selling whisky adulterated with 6 per cent. of water added to 94 per cent. of whisky having a strength of 25 degrees under proof on December 5th.—The Town Clerk appeared in support of the summons, and Mr. C. G. Champion for the defendant.—Mr. Champion asked for an adjournment. The third of the sample purchased by the inspector given back to the defendant had been analysed by an eminent firm of analytical chemists, who stated that it contained 37.97 per cent. of absolute alcohol, and only 62.3 per cent. of water, whereas all that was required by the Act was that there should be 36 per cent. of alcohol and 64 per cent. of water. Under the circumstances, seeing that Mr. Luck was a licensed victualler of many years standing, and had no sort of blot upon his name, he should like the remaining third of the sample produced in Court to be sent to Somerset House for analysis under Section 22 of the Act of 1875.—The Town Clerk said he had no objection to that course. The certificate on which they took proceedings said that the alcoholic value of the sample was only 29.7 instead of 36.—The Chairman: Nothing turns upon the inferior or superior quality of the water, I suppose?—The Town Clerk: Nothing whatever, sir.—Walter Grant, sanitary inspector, deposed to purchasing the whisky, and also some brandy, of the defendant for analysis.—Mr. Champion: Was the result of the analysis of the brandy satisfactory?—Witness: Yes, the brandy was genuine.—The case was adjourned for a fortnight for the whisky to be analysed at Somerset House.

SIMON RICHARDS, innkeeper, of Wiveliscombe, was summoned for having sold to P.C. Redman a pint and a-half of whisky, which was not of the quality, substance, and nature demanded.—Defendant pleaded guilty, and P.C. Redman stated the facts.—Supt. Ross produced the certificate of the county analyst, which stated that the spirit was 27 degrees under proof.—A fine of 10s., including costs, was inflicted.

LARD.

At Darwen, John Whalley, Chapels Brow, was summoned for selling adulterated lard. Inspector Willoughby purchased the lard, which was found to contain seven per cent. of water. A fine of 10s. and costs was imposed.

A SURPRISE FOR THE DEFENDANT.

At the North London Police-court on Saturday, the 18th fresh summons in the case of Bridge v. Fuller came on for hearing, and it is important to note that such an eminent authority as Mr. Paul Taylor admitted that where a summons was and had been dismissed for technical reasons, a fresh summons could be applied for, and granted.

Mr. Bridge appeared for the County Council; the defendant was again represented by Mr. C. V. Young, solicitor.

Mr. Bridge gave evidence to the effect that owing to a communication from Mr. Jeffrey, he attended at his place of business to take samples of milk on delivery, at 9 a.m. and 5.30 p.m. respectively. The milk was taken direct to the County Analyst, who reported that each sample contained 15 per cent. of added water.

Mr. Young asked Mr. Bridge, in cross-examination, if he knew that Fuller had been in business 50 years and had had no conviction recorded against him previously.

Mr. Bridge replied, and said that he knew Mr. Young said so, that was all; and, in addition, he knew that he was a farmer and also had a laundry, and in addition to supplying Mr. Jeffrey with milk, he supplied a private asylum, with some four or five hundred inmates.

Mr. Young: Are you the purchaser?

Mr. Bridge: Not actually; the man in charge not being instructed to sell by retail, but only to deliver to a purchaser by contract, hence I took it under Section 3 of the Act of 1879, which states that all proceedings shall be taken in all respects as if I had purchased under Section 13 of the principal Act.

Mr. Young: Did you divide the sample?

Mr. Bridge: No; it was not required, but I have here the portions left by the analyst after analysis.

Mr. Bridge then called William Vernon, but Mr. Paul Taylor, the magistrate, said the evidence was quite sufficient.

Mr. Alfred Jeffrey was called to prove the contract between himself and Fuller. He said: I paid 3d. per quart all the year round; I take a minimum of about 20 quarts per day; it was a verbal contract.

Mr. Bridge recalled, Mr. Paul Taylor, the magistrate: Have you taken samples of Mr. Jeffrey's milk before?

Mr. Bridge: Yes; about ten days before this case, and found it had about six per cent. of added water, but had a considerable portion of cream.

Mr. Young: Why were proceedings not taken then on six per cent?

Mr. Paul Taylor: I think six per cent., or, say, five per cent., rather low for proceedings.

Mr. Young then addressed his worship for the defence, and said that he thought that a second summons should not have been taken, as it comes as a surprise to him.

Mr. Paul Taylor: Yes; had I have known that the statutory period of 28 days had not elapsed at the previous hearing, I should have disallowed your objection.

Mr. Young said it was the inspector's fault.

Mr. Taylor: No; we should have noticed that the time for proceedings had not elapsed.

Mr. Bridge: It is not my fault.

Mr. Young: My client has five cows, and I shall call evidence to prove that two of these cows had run dry, and that to make up the supply under the contract with Mr. Jeffrey, a quantity of milk was purchased as it arrived at Finsbury Park Station. This was mixed

with the milk obtained from Mr. Fuller's own cows, and it must have contained a considerable quantity of water.

George Batley was called for the defence, and said he was a farm man in the employ of Mr. Fuller, and said that two of the cows had run dry owing to mismanagement.

Mr. Taylor: What kind of mismanagement?

Batley: I don't exactly know.

Mr. Taylor: You could have easily tested it with a lactometer. There is really no defence, and no attempt has been made by the defendant to test the milk he has purchased, and perfectly honest traders were rendered liable to criminal proceedings in consequence of the negligence of persons in Mr. Fuller's position.

Mr. Taylor: What is the maximum penalty?

Mr. Bridge: £20, sir.

Mr. Taylor: I must mark my sense of the gravity of this offence by inflicting a penalty of £10 and 12s. 6d. costs in the first summons, and 12s. 6d. costs in that of the second.

SOOTHING SYRUPS.

A PROSECUTION at Hull last week for the sale of a poison by an unregistered person disclosed the fact that the preparation labelled "The Mother's True Friend: for mothers and children—prepared at Peacock's Drug Stores, 13, Barmston-street," contained a syrup in which there were morphine, Epsom salts, and dill water, the whole being coloured.

There was as much as one-third of a grain of morphine in an ounce of fluid. There was $5\frac{1}{2}$ ounces of fluid, and in that there was 17 grain of morphine. That amount of morphine was highly dangerous, and would certainly be fatal to infants. The dose for infants, mentioned on the label, ought really to be given, if at all, to adults, and would probably be fatal were infants to take it.

There is no justification whatever for the sale of these pernicious nostrums, and they form an easy and, judging by their enormous sales, a much-availed-of means of getting rid of unwanted infants. Any person administering the nostrums to infants ought to be liable to severe punishment, for there exists no doubt that the syrups play a leading part in our terrible infant mortality.

WHAT IS A SEIDLITZ POWDER?

At the Brentford Police-court on Jan. 18, Mr. E. F. Strickland, chemist, The Broadway, Ealing, was summoned at the instance of the Middlesex County Council for selling a box of seidlitz powders not of the nature, substance, and quality demanded.—It appeared from the evidence of several witnesses that on 18th Dec. W. Randall, assistant to the Inspector under the Food and Drugs Act, went into the defendant's shop and asked for a box of seidlitz powders, which was handed to him, and for which he paid 10½d. The box and its contents were sent on to the Public Analyst, who certified that the powders were not prepared in accordance with the British Pharmacopœia. The blue packets contained an average of 204 grains of a mixture of Rochelle salt and bicarbonate of soda, the proper quantity being 160 grains, and the white packets contained an average of 46 grains of tartaric acid, the proper quantity being 3 grains. Inasmuch as the requirements of the British Pharmacopœia had not been complied with there had been an infringement of the Act.—For the defence it was urged that it was the common practice of chemists throughout the country to sell more than one kind of seidlitz powder, some stronger, some flavoured with lemon and with a little tincture in them. When Randall asked for a box of seidlitz powders he was asked whether he wanted the best, and he said, "Yes."—A fine of 5s. and costs was imposed, the bench consenting to state a case.

FLOOR SCRUBBING BY MACHINERY.

HOWEVER essential to cleanliness scrubbing may be the operation itself is as dirty as it is laborious and unhealthy. A machine has, says *The Hotel*, been devised which will scrub the floor, wipe it dry, and collect all slop and dirt as fast as the operator can walk, performing in one hour what is for the ordinary charwoman a hard day's work. In addition to celerity other advantages are claimed. The water can be much hotter than if the hands are to be used, in fact it can be boiling, which greatly facilitates the cleansing of the floors and leaves them much whiter than any manual labour can effect. The machine is always washing with clean water, the soiled being taken up into a separate tank. The floors are wiped much drier than by hand, and can be polished within an hour afterwards.

Disinfectants can be used in the water if desired. One lad or young girl can operate the machine and clean a large floor in a very short time. The machine, we understand, has been thoroughly tested, and is in every way a complete practical success. That there will be a huge demand for it if these claims prove to be substantiated, goes without saying. Inquiries should be addressed to the Scrubbing Machine Syndicate, Limited, 2, Exchange Place, Middlesbro'.

DRY SOAPS OR SOAP POWDERS.

ONE important branch of the soap trade of the present time is the manufacture of what are commonly known as "dry soaps." In the popular estimation these are, or, at all events, were at first, considered to be dried soaps—that is, the ordinary soap dried and powdered. "This, of course, they are not," says our ably edited contemporary, the *Chemical Trade Journal*.

The writer does not know when or by whom this class of soap was first introduced, neither has he ever seen any historical account of them, but that they fill a want is testified by their sale. A few years ago there were only one or two makes. Now there are many, nearly every soap-maker preparing a dry soap as well as his ordinary kinds, while there are some who do nothing else. The number of fancy names under which they are sold to the public is legion. Some are of excellent quality, while others are but indifferent. The great bulk of the dry soaps are really mixtures of ordinary hard soap, soda crystals, and soda ash, ground to a fine powder. Some contain Glauber's salt, in place of the soda crystals; others contain a little paraffin wax or borax. The price at which they are sold, however, does not permit very expensive materials being employed in their preparation. Different makers mostly hold opinions of their own upon the best methods of making their soaps, but the *crux* is to get them into as fine a powder as possible.

A very good plan is to throw into the pan of an edge runner mill the required amount of soda crystals, soda ash, and soap, and give them a preliminary grinding and mixing, but care must be taken not to continue the grinding too long or the soap will begin to grow pasty. From the edge runner mill the materials are transferred to a disintegrator, in which they are ground to an impalpable powder. The "Devil" disintegrator seems to be well adapted for the grinding of dry soap, as the action is so rapid that the soap has no time to get hot and therefore liable to become pasty, as is the case with some other forms of grinding mills.

The following is an analysis of a well-known make:—Water, 47·85 per cent.; soap, 19·25 per cent.; sodium carbonate, 32·90 per cent. This soap can be made by taking 25 lbs. of a good soap made from tallow and cottonseed oil, and grinding it with 75 lbs. of soda crystals. Sometimes such a mixture is apt to work pasty in grinding, especially if the soap be soft. This can be remedied by throwing in a little ammonia-soda.

Another soap contains:—Water, 48·36 per cent.; soap, 50·00 per cent.; sodium carbonate, 46·64 per cent. This soap is made by taking 6 to 7 lbs. of a good soap, adding 5 lbs. ammonia-soda and 88 lbs. of soda crystals, and grinding them together.

The following is a common make of dry soap:—Water, 50·28 per cent.; soap, 7·69 per cent.; sodium carbonate, 22·01 per cent.; sodium sulphate, 20·02 per cent. This is made by taking 9 lbs. of soap, 46 lbs. soda crystals, and 45 lbs. Glauber's salts, and grinding them all together, adding a little ammonia soda if required, to keep the material from going pasty.

When paraffin wax is added much the same formula is used, only about ½ lb. of low grade paraffin wax or scale per cwt. of the soap is thrown in and ground up along with the other ingredients.

In place of soda crystals, ammonia soda may be entirely employed, adding an equal weight of water during the grinding.

Now a few words as to the stock soap which is used in making these dry soaps. Much of the lathering qualities of the powder depend on the quality of the soap used. An excellent soap can be made from bleached palm oil, cottonseed oil, linseed oil and palm kernel oil. This gives a soap which lathers freely. Another good soap for this purpose can be made from tallow, cottonseed oil, and cocoa-nut oil. Whether it is made by the hot or cold process is immaterial; neither is it needful to salt out, for when well made the soap can be used just as it comes from the pan. Should such a soap show signs of going more pasty in grinding than an ordinary finished, hard soap, the quantity of soda crystals should be reduced, and the quantity made up with soda ash, or 58 per cent. alkali. Some makers of these dry soaps have used oatmeal, but with what object it is difficult to say.

DISEASED MEAT PROSECUTIONS.

At the Dunfermline Police-court, on January 13th, David Drummond, fletcher, Morton-place, was charged with having, within his shop or premises on 9th January, the carcase of an animal, or part thereof, weighing 242 lbs., intended for human food, which was diseased and unfit for the food of man. Accused, in pleading guilty, said he had been intending to boil the beef for the pigs. On it being pointed out that this practically amounted to a plea of not guilty, accused said he would just plead guilty. The Prosecutor said it was one of the worst cases he had ever seen. A fine of £8 was imposed, with £1 ros. 6d. of expenses, or fourteen days' imprisonment.

At Lambeth, on January 14, George Record, of Peckham Park-road, was summoned by Inspector Homer, on behalf of the Camberwell Vestry, for exposing for sale, or depositing for the purposes of sale, 30 pieces of offal which were unsound and unfit for food.—Mr. G. W. Marsden appeared in support of the summons.—On the 31st ult. Inspector Homer visited the defendant's shop and seized 30 pieces of offal, comprising ox hearts, sheep's hearts, liver, etc., all of which, according to his evidence, were unsound and unfit for food. Whilst he was in the shop a woman named Dunn entered, and complained that some ox heart which she had just purchased through a girl was unfit to eat.—Mrs. Dunn was now called, and, in answer to a question by his worship, said she had previously dealt at the defendant's shop, and had found the things good.—The defendant asserted that at the time this occurred he was ill in bed, and called a witness to that effect.—Mr. Hopkins ordered the defendant to pay a fine £10, or go to prison for two months.

VARIATIONS IN MILK STANDARDS.

EVEN the best authorities differ materially as to what should constitute a legal standard for milk, some contending that a certain percentage of solids should be stipulated for, while others argue that such a standard would be unfair to the producers. In America, as at home, there is much diversity of opinion on this point. Subjoined will be found details of the standards which have been adopted by the different States:—

New York.—Law, 1893—12 per cent. of solids; 3 per cent. of fat; 88 per cent. of water or fluids

Massachusetts.—Law, 1886—13 per cent. solids; 87 per cent. watery fluids; 93 per cent. milk solids.

Maine.—Law, 1893—12 per cent. solids; 3 per cent. fat; 88 per cent. water.

Michigan.—Law, 1889—12½ per cent. solids; 3 per cent. fat; 87½ per cent. of watery fluid.

Minnesota.—Law, 1889—13 per cent. solids; 3½ per cent. fat; 87 per cent. water.

Iowa.—Law, 1893—3 per cent. of butter fat.

PERMANGANATE OF CALCIUM.

NARDAS (*Gaz. Méd. de Paris*) speaks of the superior power of oxidizing possessed by this substance. When brought in contact with organic matter it is at once resolved into manganese dioxide and lime, giving off oxygen. Experiments prove it to be superior to bichloride of mercury and quite free from toxic or caustic properties.

ORIGIN OF COLOUR-BLINDNESS.

"A FRENCHMAN, M. Dubois, has made an interesting suggestion as to the origin of colour-blindness," says *Knowledge* (Lit. Digest). "This defect of vision almost invariably consists in inability to recognise red. Now a body cooling down from incandescence extends its spectrum towards the red end, or, in other words, the white-hot to violet-coloured body becomes yellow and finally a dull red as it cools. A few stars such as Sirius are white-hot, many others like our sun are cooler and therefore yellow, while others are so cooled down as to shine with a dull red light. Primitive man, according to M. Dubois, lived when the sun was in either the Sirius or the pre-Sirius stage; that is, when the sun, which is the source of all colour, was white-hot and had no red component in its spectrum; he had, therefore, no power of recognising red. Colour-blindness, therefore, says M. Dubois, is merely atavism or degeneration to the primitive type. The objection to this ingenious theory is that we have no reason whatever for supposing that primitive man was contemporary with a white-hot sun; further, all white-hot suns that we know of have some red at any rate in their spectrum. The intensity of particular components of the spectrum may vary, but the components are still there."

SWANSEA AND THE BOROUGH ANALYST.

THE General Purposes Committee recommended that the analyst to be appointed for the borough be paid a minimum salary of £100

per annum, for the analyses of samples of food, drugs, water, and petroleum; based on the following rates and numbers:—1. Alcoholic liquors, water, petroleum, drugs, poisons, ros. 6d. each; say 50 samples. 2. Butter, lard, cheese, confectionery, milk, cream, flour, bread, tea, preserves, pickles, sauces, and vinegar, 5s. each; say 240 samples. 3. Arrowroot, groats, oatmeal, sago, all farinaceous foods, cayenne pepper, honey, isinglass, coffee seeds, spices, and mustard, 2s. 6d. each; say 110 samples. The person appointed to undertake to receive and analyse samples for individual ratepayers at the rates hereinbefore stated, the amounts received by the analyst in respect thereof to be paid into the borough fund, and credited to his salary. Your committee also recommend that the appointment be made under Section II. of the Sale of Food and Drugs Act, 1875, for a period of one year, and that Mr. Pendrill Charles and Mr. C. A. Seyler, who already hold appointments, approved by the Local Government Board, be requested to attend a meeting of your committee relative to the proposed terms of the appointment. It is further recommended that the chief inspector of nuisances, with two assistant inspectors of nuisances, to be hereafter named, be charged with the duty of collecting samples for analysis.—The committee, whose minutes were moved by Alderman Tutton, recommended that Mr. Charles A. Seyler be appointed analyst for a period of 12 months, under and subject to the terms and conditions referred to in the preceding minute.

Alderman Rawlings proposed as an amendment, Alderman Harris seconded, and Mr. Watkins and others supported, that Mr. Seyler be appointed for a period of 6 months, provided he agreed with the terms. The amendment was carried by a large majority.

DOVER TOWN COUNCIL AND THE FOOD INSPECTOR.

THE Town Clerk reported that on 24th of April, 1894, the Inspector of Nuisances was ordered to submit samples of goods to the public Analyst for examination. Councillor Ayers moved that the Inspector be asked to report why no samples had been submitted during the past quarter. The motion was carried.

THE MUNICIPAL OFFICERS' ASSOCIATION.

DR. DUDFIELD, medical officer for health for Paddington, presided at the adjourned Superannuation Conference of Associations representing municipal officers last week. The representatives present confirmed the previous resolution of the conference, "That urgent need exists for superannuation allowances being assured to officers of municipalities and sanitary authorities throughout the country," and also passed a resolution appointing a committee to watch the progress of the Poor Law Officers' Superannuation Bill, and to wait upon the Joint Superannuation Committee of the Poor Law Officers and Union Clerks' Associations to offer all help within the power of the conference towards the promotion of their Bill. The desirability of federating all the various associations for dealing with questions affecting the members as a body was discussed, and the opinion was generally expressed that such a federation would be of great benefit to all municipal officers.

FERTILISERS AND FEEDING STUFFS ACT.

It is much to be regretted that the difficulties of administering the Fertilisers and Feeding Stuffs Act and the Food and Drugs Act should be so serious as it appears they really are. Complaints as to the extreme difficulty of securing convictions under the Food and Drugs Act are constantly reaching us. And now, according to the report which has just been presented to the County Councils Association, a similar difficulty is being met with in enforcing the provisions of the Fertilisers and Feeding Stuffs Act. In only seven counties have more than ten samples been submitted for analysis, and eight counties have only been responsible for one analysis each, while in ten counties the Act appears to be absolutely a dead letter. Only one prosecution followed on analysis, and in that a conviction was not obtained. This arises from several causes, the chief of them being the difficulty and expense of administering the Acts, and the obstacles which are placed in the way of the inspectors in the performance of their duty. Since both the Acts are aimed at the prevention of adulteration, and are of the greatest possible importance, this state of things should be remedied if it can possibly be done—and surely there must be some means by which the difficulties can be overcome. Inaccuracy of analysis is, of course, another difficulty; and only a few months ago, complaints were made to the effect that the analyses of the Somerset House authorities, when they differed from those of the county analysts, as they not unfrequently do, were by no means always in the right. Would not a conference of delegates from the different Councils be able to devise some means of improving matters generally as regards the working of these two Acts?—*County Council Times*.

DRAIN LAYING.

THE difficult and delicate nature of the work involved in the proper and satisfactory laying of drain pipes is well understood by sanitarians. An instance was given us the other day by a well-known gentleman in a large provincial city, of the difficulty met with in the securing of really sound material and workmanship in drain laying. The gentleman in question had occasion to have some drains laid under a large warehouse, the pipes having to pass directly underneath the building. It was imperative, therefore, that the pipes should be laid with the utmost care and precision. A well-known contractor was entrusted with the job, to whom special injunctions were given as to the stringent requirements of the case. A clerk of the works was also employed. After the work was completed the gentleman insisted on the water-test being applied, with the result that it was discovered that the pipes leaked at almost every joint, and the whole of the work had to be re-executed. But this time the contractor and clerk of works were dispensed with, and the pipes re-laid by a jobbing bricklayer, who managed to do what those who had attempted the job before him had failed to do, viz., to make the joints watertight.—*The British Architect.*

FROST AND BOILERS.

As to the prevention of bursting of boilers in households during the frosty weather, the Grand Junction Waterworks Company suggest the following precautions:—

"1. That all cisterns from which boilers are supplied, and particularly the pipes communicating therewith, should be placed in positions where they are not likely to be affected by frost.

"2. That a safety valve should be fixed on every boiler that has not a loose, movable lid.

"3. That should the water supply be interrupted from any cause, the fire should be at once withdrawn until the boiler is cold and the water supply has been restored. It is very dangerous to put water into an empty boiler while hot."

NORFOLK COUNTY COUNCIL—COUNTY ANALYST'S REPORT.—The County Analyst (Mr. F. Sutton) reported the examination of 29 samples of various articles under the Sale of Food and Drugs Act, of which only one, of butter, was found to be adulterated. A prosecution has been ordered.

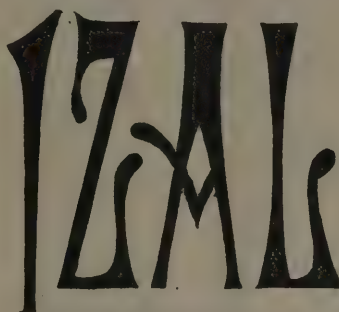
THE DOCTOR'S PRESCRIPTION.—"I am on my way home, doctor," said a parsimonious alderman, who was fond of getting advice *gratis*, meeting a well-known physician, "and I am thoroughly tired and worn out. What ought I to take?"

"Take a cab," replied the intelligent medico. *ALL B.B.C.*

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Food and Sanitation.

SATURDAY, FEBRUARY 1ST, 1896.

THE TRADER AS "CORPUS VILE."

ON another page we publish an extraordinary document well worthy careful perusal by all traders. It has for a long time been clear to those who have

studied the working of the Adulteration Acts that the trader is like a corpse on the dissecting table, being butchered for the benefit of everyone but himself. If he sells British wine containing antiseptics, one body of scientific experts swear it is dangerous to health, whilst another body as solemnly swear that it is absolutely wholesome. If it be preserved peas, the same thing occurs, one body of eminent scientists swearing that copper is harmless against the equally strong oaths of others who accuse it of being poisonous.

In the lard case, which we publish in another column, the wit of man could not reconcile the conflicting testimony. But what the wit of man can recognise, and what this case clearly proves, is that the retail trader is the *corpus vile* which manufacturers, Somerset House chemical referees and public analysts dissect as they please, and that the retail trader pays for all this experimenting either in his reputation as an honest man, in loss of trade, or by fines for alleged offences which, were they investigated thoroughly, might yield results as amazing as those in the document we publish. It has been suggested by many of our readers that it would be well if a truce were declared until the Somerset House analysts and the public analysts settled the wrangle of methods of analysis and standards of purity, which may amuse them as much as the stone-throwing did the boys in the fable, but has very disastrous results for its victims—the vendors of food, drugs and drink. Let us by all means have pure foods, but let us have other things equally pure. Let us have Somerset House referees who can analyse those foods. Let us have standards of purity for them. Let public analysts know those standards, and in the case of new forms of fraud, communicate with the Government referees and receive their replies concerning them. At present one analyst adopts one method, another a different one again, and what the Government referees adopt no one knows. Until this wretched state of things be altered the traders who ask for a suspension of the Acts until accuracy and method be brought about in their working, have an argument against which it is hard to find a fair answer.

ADULTERATION IN PENNSYLVANIA.

COMMISSIONER WELLS, of the dairy and food department of Pennsylvania, has made a comprehensive investigation of food products with reference to the presence of adulterations. Among those which he found sophisticated are the following:—

Allspice, which often is mainly composed of ground and roasted cocoanut shells; baking powder; beef, wine and iron, prepared as a tonic; butter, buckwheat flour, candy, catsup, cider, cheese, cinnamon, cloves—the latter made almost entirely from ground cocoanut shells, the odour and taste of cloves being scarcely perceptible; coffee, consisting chiefly of coffee screenings or damaged coffee, but sold at a high price as a pure article; fresh "Java" made from wheat and barley hulls, roasted with sugar and containing no coffee; codfish not codfish at all—merely cheap dried fish, cream of tartar, adulterated with flour; flaxseed, adulterated with starch; fruit "butters," such as apple butter, peach butter, etc., very seldom pure, being adulterated with starch waste and salicylic acid; the same is true of grated pineapple; ginger, adulterated with ash, rice hulls, rice flour, and cayenne pepper; lard, maple syrup, made from commercial glucose, thinned with about 20 per cent. of water;

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BIRD'S CUSTARD POWDER

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mixed spices, orange juice, lemon oil, lemon phosphate, molasses, mustard, olive oil, pepper, vinegar, vanilla extract, all kinds of preserves, extract of strawberries, and tea. To add to the deception a few apple seeds are scattered through the so-called fruit jams, or timothy or other seeds are added to the mixture to represent raspberry, strawberry, etc.

THE MARGARINE TRADE.

A BULLETIN recently issued by the United States Department of Agriculture contains some particulars relating to the margarine industry of the Netherlands, which are of considerable importance to English agriculturists. About 20 years ago, it appears, in consequence of the sharp competition of butter-makers in other countries, the dairymen of Holland commenced to adulterate their butter by using syrup and glucose, first using about 10 per cent. and gradually increasing the proportion to 50 per cent. Other ingredients were required, together with ample facilities for dealing with the manufacture of large quantities of so-called butter. Hence arose the large margarine factories at Rotterdam and other places, and arrangements were made with merchants in Chicago for the supply of oleo oil, which is converted into margarine. In 1890 Chicago sent to Rotterdam 60,000,000 lbs., or more than half of the total American supply. Other export cities are New York, Philadelphia, Omaha, Kansas City, and Boston. In Rotterdam, where the trade centres, there are eight importers, and 15 brokers dealing exclusively in American oleo oil. The large margarine factories in Holland number 32, and the large sums of money invested in the newer ones demonstrate the faith of their Dutch owners in the future of margarine. A plant lately erected in Rotterdam cost 200,000 dollars, and ranks among the imposing structures of the city.

Imports of oleo oil into the Netherlands have increased 600 per cent. within five years, and there has been a corresponding growth in the exports of margarine. The factories are chiefly engaged in supplying the foreign demand, the home consumption being estimated at less than 10 per cent. of the total output. The principal buyers of the Netherlands margarine are Great Britain, Belgium, and Germany. The exports of margarine from Rotterdam reached 133,606,000 lbs. in 1891, 134,838,000 lbs. in 1892, and 131,885,000 lbs. in 1893. The choicest qualities of oleo oil, neutral lard, and cottonseed oil are imported from the United States, and the average prices obtained somewhat exceed those paid for the products of any European country. The quality or grade of oleomargarine materials is determined in much the same way as that of dairy butter, being a matter of delicacy of taste.

The bulletin states that a reduced range of prices for all oleomargarine products and materials prevailed throughout 1894, and that the first quarter of the present year compared even less favourably with

previous periods of late years. The reduction in values is attributed to the fact that the improvement in the refrigerator systems on board vessels has enabled England, the chief market for Dutch oleomargarine, to import enormous supplies of choice dairy butter from Australia and New Zealand.

SANITARY INSPECTORS AND MEDICAL OFFICERS OF HEALTH.

OUR contemporary, the *Surveyor*, says:—"The official organ of the Sanitary Inspectors' Association gives editorial voice to a strong feeling which has long been growing among sanitary inspectors. The spirit of revolt has long been abroad, and in this case it is revolt against the practice of medical officers taking inspectors' reports, dressing them up, presenting and generally fathering them. The hand is the hand of the inspector, but the voice is that of the medical officer. The inspectors stand on their rights as distinctly-specified officials, and they claim that it is in accordance with the spirit and letter of the Public Health Acts that they should submit their own reports direct to their authorities. The tone of the editorial note may be gathered from this extract: 'No doubt it is difficult for the medical officer of health to show such a record as to justify his existence without such assistance as the inspectors' reports give him.' If sanitary inspectors act in the spirit this indicates we imagine there will be trouble ahead."

AN AMERICAN PARABLE OF THE BLACKSMITH AND THE PHYSICIAN.

UNDER this heading the *Indian Medical Record* says: "A certain man was hanged, and he died, and he left two sons, honest men. Now, one of these sons was a blacksmith; but the other became a physician. And after their father had been taken from them, these brothers made their homes in other lands. And the blacksmith would have prospered, but it befell that some one asked him how his father died. And the blacksmith looking angrily upon him, answered: 'He was hung.' For the blacksmith was an honest man. Howbeit, presently, when a horse was missing, men gathered and seized and hanged the blacksmith, saying: 'This man must take after his father.' So the blacksmith did *take* after his father. And, at the same time, in his own city, one inquired of the physician by what means his father died. And the physician covered his face and wept. But while he wept, he considered, saying within himself: 'If I say he was hanged, then shall I shock this man, and give him pain. Nevertheless, I must tell the truth.' He said, therefore: 'My father died of heart failure.' And again he wept, the questioner weeping with him. Then this being told, men said: 'Doubtless, since his father died of heart failure this good physician and loving son hath made a study of kindred diseases.' So they resorted unto him. And the physician became a specialist, and he looked at them who came in and coughed once and sneezed twice, and demanded 100 dols. And they gave gladly."

For the physician was an honest man, and the model upon which the "expert" witness forms himself.

IMPORTANT HIGH COURT DECISION *re* MILK.

(BEFORE Mr. Justice Hawkins and Mr. Justice Kennedy on Jan. 27.) Fortune, appellant — Hanson, respondent. This was a special case stated by a stipendiary metropolitan magistrate, and raised the question whether an analyst's certificate of milk ought to show what he considers to be the normal proportion of water in milk.

Mr. Macmorran appeared for the appellant, the inspector, Mr. Morton Smith, for the respondent.

An information was taken out against the respondent at Clerkenwell Police-court. The offence charged was that he did sell and proceed to deliver on April 24, 1895, to Elias Jones, a churn of milk in pursuance of a contract to sell, the

same not being of the nature, substance, and quality of the milk demanded by the purchaser, in that it contained 5 per cent. of added water contrary to section 6 of the Sale of Food and Drugs Act, 1875, and of section 3 of the Act of 1879. The facts were these. The respondent sold a churn of milk to Jones on April 24. While it was being sold the appellant, Inspector of Nuisances for St. Mary, Islington, procured a sample of the milk and had it analysed by the public analyst. The certificate of the analyst was to the following effect:—

"I . . . do hereby certify that I received on the 25th day of April, 1895, from Mr. Fortune, a sample of milk marked as above, for analysis (which then weighed 20 oz.), and have analysed the same, and declare the result of my analysis to be as follows:—

"I am of opinion that the said sample contained percentages of foreign ingredients as under:—5 per cent. of added water, to the prejudice of the purchaser. Observations.—No change had taken place in the constitution of the article that would interfere with the analysis. This sample was handed to me undivided. I divided it into two parts, and one of which parts I returned to the purchaser."

This certificate was objected to as being bad evidence of the offence charged on the following grounds:—

(1) That it did not state as the result of the analysis the parts contained in the sample analysed; (2) that it contained statements of fact not authorised by the statutes, which facts should have been proved by sworn testimony and not by certificate. The statement of fact objected to was that he divided the sample into two parts, one of which he returned to the purchaser. In support of the first objection it was contended that, as milk is composed partly of water and there is no fixed standard, the analysis should state the exact quantities of the water and other constituent parts, so that a respondent might be able to determine whether he would require the inspector to attend for cross-examination, or whether he should appeal to the chemical officers at Somerset-house. In support of the second point it was contended that if the analyst were permitted to certify other facts than those authorised in the statute there would be no limit to the extent of proof which might be given by the certificate. The magistrate rejected the certificate, and therefore dismissed the information. He, however, granted this case at the request of the appellant. The form of the certificate is given in the schedule to the Act. It was followed for the most part in the certificate in the case—with the exception of the parts objected to. The following note appears in the schedule applicable to the word "observations":—"Here the analyst may insert at his discretion his opinion as to whether the mixture (if any) was for the purpose of rendering the article portable or palatable or of preserving it, or of improving the appearance, or was unavoidable; and may state whether in excess of what is ordinary or otherwise, and whether the ingredient materials are or are not injurious to health. In the case of a certificate regarding milk, butter, or any article liable to decomposition, the analyst shall specially report whether any change had taken place in the constitution of the article that would interfere with the analysis."

Mr. Macmorran referred to the Food and Drugs Act, 1875, 38 and 39 Vic., c. 63, s. 18, and urged that the certificate was good. It was not necessary to set out the constituent parts of the sample. It was enough to show what foreign article was introduced. "*Bakewell v. Davies*" (1894) (1 Q.B., 296) showed that if there were words of surplusage they could be left out.

Mr. Morton Smith said that "*Bakewell v. Davies*" showed that if it was a case of abstraction the constituent parts need not be set out, but if it was a case of adulteration they must be. "*Newby v. Sims*" (1894) (1 Q.B., 478). It was most important to know what the analyst's basis of analysis was. It was all the more important in a case where only an addition of 5 per cent. of water was alleged. There was a dispute among scientific men as to what was the proper percentage of water in milk. Water was not a foreign ingredient.

The second point was not really contested.

Mr. Macmorran admitted that water was a constituent of milk, but pointed out that "added water" was a "foreign ingredient."

Mr. Justice Hawkins asked whether it was not the duty of the magistrate to decide the case. Ought he not, therefore, to be informed of the amount of water in milk which the analyst took as being the normal standard.

Mr. Macmorran said that the respondent could always cross-examine the analyst if he wished, and then the standard could be ascertained. The certificate was only *prima facie* evidence. In the case of "*Newby v. Sims*" the

analyst had not followed the form of the schedule. He cited "*Harrison v. Richards*" (45 J.P., 552) to prove that the justice ought to convict on the certificate of the analyst if it be not called in question.

The Court upheld the magistrate's decision.

Mr. Justice Hawkins went at length into the various sections and the form of certificate given in the schedule. He thought the certificate here did not conform to the requirements of the Act. It was admitted that milk naturally had water in it, and therefore it was necessary, in his opinion, that the magistrate should know what standard the analyst took. Standards differed greatly; the magistrate might take one, and the analyst another. To say there was 5 per cent. of "added water" was merely an opinion of the analyst. The justices ought to know upon what percentage he based his calculation. It was not as if water was a substance totally unknown in milk in its pure state.

Mr. Justice Kennedy concurred. The certificate was to give substantially the data on which the justices could act for themselves. It would be wrong to convict on a mere statement that there was 5 per cent. of added water. The analysis should be clear and afford materials on which the justices and the accused also might know how the results had been arrived at. That was the principle of "*Newby v. Sims*" (1894) (Q.B., 478).

WHAT IS A COMMON LODGING-HOUSE?

SINGULAR OMISSION FROM AN ACT OF PARLIAMENT.

At Wrexham, on January 20th. Thomas Charles Dodd, of Temple-row, was summoned by Mr. Chas. Moore, sanitary inspector, for keeping a common unregistered lodging-house. Mr. Thos. Bury (town clerk) prosecuted, and said the summons was issued under the Public Health Act of 1875, and defendant was charged with letting beds in his house to casual lodgers, at prices ranging from 4d. to 1s. per night. He understood that the defence would be that the defendant's house was not a common lodging-house; and unfortunately there was no clear definition in the Act as to what was a common lodging-house. If the defence should prevail, it would open a very wide door. The inspector, in reply to Mr. Evans, said his definition of a common lodging-house was any place where they received three adult persons (other than the members of one family) who occupied the same bedroom, and paid for their lodgings.

Mr. Evans, for the defence, maintained that there was no case to answer. The Town Clerk had admitted that the Act did not give a definition of a common lodging-house, and he could not supply one. That omission of a definition was certainly most extraordinary, as the term "common lodging-house" was frequently used in the Act. They had had the definition of the sanitary inspector, but if that held good thousands of boarding-houses in the Isle of Man and other seaside resorts would come under that definition. His (Mr. Evans') idea of a common lodging-house was a place where vagrants and persons convicted of offences were received as lodgers.

After an argument between the solicitors and the magistrates' clerk as to the definition of a common lodging-house, the magistrates dismissed the case.

DANGEROUS POPULAR ANTISEPTIC.

THE popular knowledge that carbolic acid is an antiseptic is productive of a great deal of harm. Surgeons have, until recently, regarded it as indispensable to have their instruments in a tray of carbolic solution, which, if strong enough to sterilise the instruments, destroyed the surgeon's hands for practical purposes, and if, as was usually the case, it was so weak as not to actually burn the hands, did no good as an antiseptic—circumstances which were bad for the patient, the surgeon, and all concerned. The disadvantages of carbolic acid, however, can be best seen in out-patient clinics, whither patients continually come with the skin of their hands parboiled and peeling off, exposing the raw subcutaneous tissue, more or less eroded by the carbolic acid, which a kind friend had advised them to use for a slight cut, or burn, or abrasion. The desirability of ascertaining the strength of what they are using does not occur to them. If the lay mind could only be made to appreciate that carbolic acid is always dangerous and seldom efficient as an antiseptic, a great deal of unnecessary suffering would be prevented.—*Boston Medical and Surgical Journal*.

MILK PRESERVATIVES.

"THE Detection and Estimation of Preservative Agents in Milk" forms the subject of an interesting contribution to the current issue of the *Agricultural Students' Gazette*—the organ of the students of the Royal Agricultural College at Cirencester. The article in question is from the pen of Mr. C. C. Duncan, and deals at much length with the most approved methods of determining the extent to which preservative agents enter into the composition of what may be described as "commercial" milk. Most of the advice given is of such an advanced character as to be of service only to those having at command appliances wherewith to conduct chemical analyses on a somewhat elaborate scale; but the paper also contains much that cannot fail to interest many whose dealings with milk do not extend quite so far as the question of analysis. It is of general interest, for instance, to learn that all effectual chemical preservative agents, at certain degrees of concentration, injure not merely the micro-organisms which excite fermentation and putrefaction in milk, but also the human beings who consume such milk. It is most difficult to lay down exactly the degree of unwholesomeness of milk containing preservative agents; and Mr. Duncan very properly contends that, before the use of a preservative agent can be sanctioned, proofs must be demanded and given that the substance has, on use, no injurious effects (not necessarily visible) in the proportions which may possibly be used for preserving milk.

Mr. Duncan enumerates the agents usually employed in the preservation of milk as being as under:—1, borax; 2, boracic acid; 3, benzoic acid; 4, salicylic acid; 5, formic aldehyde; 6, glycerol; 7, sucrose; 8, sodium carbonate; 9, sodium bicarbonate; 10, sodium fluoride. Milk, he says, can only be preserved by means of boracic acid, if the quantity added exceeds that which can be used without altering the taste. The poisonous action of borax and boracic acid on bacteria in milk is slight. Undoubtedly, small quantities of borax or boracic acid help to keep milk fresh for a short length of time. Milk containing small quantities of these substances will ferment, and very often the cream will not separate for some time. As to the internal action of boracic acid, we are told that, in man, no very serious symptoms are visible after the ingestion of 1, 2, or 3 grams acid in *very dilute solutions*; but concentrated solutions are much less readily tolerated. Two grams, dissolved in 50 grams of water, occasioned violent pain in the stomach and diarrhoea. Rabbits and dogs, when given daily doses of 0.5 gram, or 1.2 gram in 20 or 50 grams of water, became, in a few days, unwell, and suffered from diarrhoea, salivation, and emaciation. In some cases a fatal result was observed. On several occasions severe illness is recorded in human subjects on using the acid as an antiseptic, and also on subcutaneous injection. In very careful and repeated experiments on the utilisation of food in human subjects, it has been found that a daily dose of from 0.5 gram to 3 grams of boracic acid added to human diet affects the absorption of the nutritive substances ingested, and probably occasions an increased separation of intestinal epithelia, or an increased secretion of intestinal mucus. The use of preparations of borax for preserving meats is prohibited for the German navy. The addition of boracic acid or its compounds to milk must not be tolerated, especially if the milk is to be used by infants and invalids.

Benzoic acid has a sharp, acid taste, and produces a peculiar irritation in the throat. Its vapour has a penetrating aromatic odour, attacks the eyes, and provokes coughing. It possesses decided antiseptic properties. It volatilises rapidly at a temperature much below its boiling point, and forms a beautiful, shining, feathery sublimate. Sodium benzoate is recommended for preservation of milk, and it is said to be about one-third more efficacious than the acid. Commercial salicylic acid always contains carbolic acid, and is a white substance composed of fine needle-like crystals. It has an acid taste (strongly irritating), melts at 155 degrees C., and sublimates at about 200 degrees C., in slender, shining needles. It possesses distinct antiseptic properties, and, owing to its slight taste, is employed for preserving many organic substances. Formalin, which is used for preserving milk, is a solution of formic aldehyde (about 40 per cent.) in water. It has a very penetrating smell, and is a powerful irritant, affecting strongly the eyes and mucous membrane. R. T. Thomson states that he added 8½ grains of a 40 per cent. solution of formalin to a gallon of milk, and allowed it to stand for seven days, and at the end of that time the milk was quite "sweet." A gallon of milk containing 35 grains of boracic acid was quite sour at the seventh day. An especially prominent part is played by sodium carbonate and bicarbonate in improving milk. They do not prevent the formation of acid in the

milk, but merely combine with the acids, and, therefore, hinder them from coagulating the milk. The carbonate and bicarbonate serve to deceive the public as to the newness of the milk. Prœust regards the addition of sodium carbonate as very hurtful to children. Fluorides are present in normal milks in very small quantities. Nothing is known of the action of sodium fluoride upon the human organism.

DISEASED MEAT.

At Scarborough on Jan. 24, Edwin Prust, 38, St. John's-road, and William Prust, 126, Longwestgate, were summoned for having unlawfully in their possession the carcass of a bull which was diseased, on the 17th inst. The two defendants were also summoned for having unlawfully exposed for sale at the Market Hall certain pieces of meat which were diseased, on the 17th inst.

The Town Clerk (Mr. J. E. T. Graham) appeared to prosecute, and Mr. A. Rollitt was for the defence.

Defendants pleaded not guilty.

Mr. James Bastiman, Inspector of Nuisances, said that on the 16th Jan. he, in company with the Medical Officer of Health (Dr. Littlejohn), was going round the town inspecting meat, when they visited the defendants' slaughter-house in Wrea-lane, where they saw a side of beef hanging up. They examined it, and found the flesh was soft and flabby, and of an unusual colour. From a statement made to him, witness and Dr. Littlejohn, followed by the two defendants, went down to the Market Hall, and there saw twenty pieces of beef, which it was admitted had been taken from the same beast as that seen hanging up in the slaughter-house. By arrangement with the defendants, witness, together with Mr. F. Bright, went to the slaughter-house at six o'clock in the evening. The defendants were not there, but on coming away they met the defendants, and returned and examined the meat. The next morning, about 11.15, Dr. Littlejohn, Mr. Bright, Mr. Cooke, veterinary surgeon, and witness went again to the slaughter-house, and examined the meat. The justice condemned it, and it was then taken away. On the slab in the market, witness afterwards noticed that only four pieces of meat were left out of the twenty pieces that witness had previously seen. Witness had the side of beef weighed, and it weighed 161lbs., that would be 322lbs. for the whole beast. Witness had no doubt that the meat was unsound, and unfit for the food of man.

Dr. Littlejohn, Medical Officer of Health for the Borough, said that in Edinburgh, where he had had considerable experience as assistant to his father, who was medical officer, no less than 200,000 beasts were slaughtered during the year 1894, and out of these two or three hundred beasts were condemned. He believed that the beast in question was suffering from the same disease that fourteen or fifteen of the beasts in Edinburgh were suffering from. It was his firm opinion that the meat examined by him belonging to the defendants was diseased and unfit for food. The flesh was soft and flabby, and was of an abnormal colour. It contained an excess of fluid, and the general appearance pointed to dropsy. The beast had evidently been ill-fed, and was emaciated. Witness did not use the word dropsy in its medical sense, but as applied to the disease of animals.

Mr. Gavin Scott, veterinary surgeon, said he examined the meat in question. It was not in a healthy condition, although the absence of internal glands would not, however, justify him in saying from what particular disease the beast suffered. That the beast suffered from some disease he had no doubt.

The Chairman said that the magistrates had decided to convict, but desired to know, before passing sentence, whether there were any previous convictions against the defendant.

The Chief Constable (Mr. W. Pattison), referring to the books, said that on March 19, 1883, both the defendants were convicted in that court for exposing in the Market Hall and having in their possession unsound meat, and were fined £1 and 19s. 6d. costs each. On March 25, 1894, there was another conviction against the defendants in that court for a similar offence, and on that occasion Edwin Prust was fined £5 and 14s. 3d. costs, and William Prust was fined £1 and 14s. 3d. costs.

The Chairman said: We consider this a very serious offence, and the public must be protected. This is not your first or second offence either, and we have therefore decided to inflict a fine of £10 each, including the costs.

BEFORE the Potteries Stipendiary (Mr. Harold Wright) at Burslem, on January 21, George Weston, butcher, Wetley Rocks, was summoned under the Public Health Act, 1875, for having in his possession, for the purposes of sale, two pieces of beef which were unfit for human food. Mr. A. Ellis (town clerk) prosecuted on behalf of the Corporation, and Mr. E. A. Ashmall appeared for the defence. —It was stated that about noon on the 11th inst. the defendant, who was the holder of a stall in the market at Burslem, was seen to carry from a cart into the shambles a large quantity of beef, forming apparently the whole of one animal. Of this meat he placed a fore and hind quarter upon his own stall, and the remainder he deposited upon the stalls of a man named Clarkson, and a third person whose name did not transpire. Subsequently defendant removed the meat from Clarkson's stall and took it to that of the third person. About two o'clock, Mr. Enoch Bourne (sanitary inspector) seized the fore and hind quarter, and also the remainder from the other stall. It was examined by Mr. J. M. Taylor (medical officer), Mr. A. Hodgkins

(veterinary surgeon), and Mr. Joseph Sargeant (butcher); and having been condemned by them, was burned at the refuse-destructor by the order of a magistrate. The evidence of the experts was that the meat was lean, dark coloured, wet, soft and flabby, and totally unfit for human food. In their opinion the animal had suffered from some dropsical disease.—For the defence, Mr. Ashmall said that in the face of the professional evidence it would be idle for him to deny that the beef found on the defendant's stall was unfit for human food. There was no evidence, however, that the animal had suffered from any actual lingering disease, but, on the other hand, it was admitted that the condition of the meat might have been brought about by an accident or injury to the loins. The defendant was a young man only eighteen, whose knowledge of meat, and experience, was limited. As a matter of fact he had bought the fore and hind quarter of beef, and simply delivered the remainder of the carcase at the market for another person.—The Stipendiary said he regarded this class of offence as one of the worst on the statute-book, especially in a thickly populated industrial district like that. By its diseases were spread amongst poor people, and it was impossible to say how many lives were lost. The only grounds for leniency he could see were that the defendant was a young man, and this was his first offence. But, while taking these into consideration, he was of opinion that no fine could be commensurate with the crime committed. He therefore sent the defendant to prison for a month, and ordered him to pay £4 6s., the costs of the prosecution, or be imprisoned for a further term of 14 days.

MILK.

At Birmingham, on January 3, William Clegg, 138, Charles Henry-street, was summoned for selling adulterated milk. A sample of milk purchased at defendant's shop, on analysis, was found to contain 10 per cent. of added water. A fine of 10s and costs was imposed.—Elizabeth Davis, 23, Charles Henry-street, was fined a similar sum for selling milk containing 26 per cent. of water.—Henry Woodward, 118, Cheapside, was also fined 10s. and costs for selling milk adulterated with 16 per cent. of water. The defence in each case was that the milk was sold in the same state as it was received. Defendants had not obtained a warranty, in which way, the Bench pointed out, they could have protected themselves. The milk in the two last cases was purchased from the same man, and the magistrates said that it was to be hoped that the offence would be brought home to him.—John Fall, of Long Acre, Nechells, was summoned for selling milk deficient of 26 per cent. of fat. He had been previously fined for selling adulterated milk, and was now ordered to pay 40s. and costs.

At Kensington Petty Sessions, Thomas Cooke, Cadogan-street, Chelsea, was summoned for selling milk which was not of the nature of the article demanded.—Mr. Rickarts, solicitor, appeared for the defendant, and Mr. Chambers Leete for the Kensington Vestry.—It having been proved that the bottle containing the third sample of the milk had burst, the summons was withdrawn, with two guineas costs against the vestry.

HERBERT RANDALL, an itinerant vendor, was summoned for selling milk adulterated to the extent of eight per cent.—Defendant did not appear.—Joseph Mitchell proved having made the purchase at the request of the inspector.—Arthur Ellenden, inspector under the Sale of Food and Drugs Act, said the defendant gave his proper name and address in Bolton-road, Notting Hill. Defendant had given witness a lot of trouble. When the purchase was made the defendant said: "Shut up; I'm getting used to this sort of thing."—Mr. Chambers Leete, who appeared for the Kensington Vestry, said there were several previous convictions against the defendant. In one case the fine had not been recovered owing to the defendant having gone away.—The Bench inflicted a fine of 40s. and costs, and failing distress, 21 days' imprisonment.

At Epsom Petty Sessions James Alder, dairyman, Gladstone-terrace, Sutton, was summoned by Mr. C. J. Martin, the county inspector, for selling milk, a portion of which was analysed by Dr. Stevenson, who found it to be 20 per cent. deficient in butter fat.—Mr. Hood, for the defence, argued that the summons was bad, inasmuch as it did not state that the milk was sold to the prejudice of the purchaser, and he quoted a case reported in that morning's *Times* in support of his contention.—The magistrates held that the objection was fatal and dismissed the summons.—Mr. Martin asked for a new summons, but Mr. Hood informed him that he was too late, the statutory limit having expired.—There was a summons against a man named Thomas Waight for a similar offence, but as it was similarly recorded it was withdrawn.

At North London, on Jan. 25, Benjamin Bryan, of Brownswood-road, South Hornsey, was summoned by the Middlesex County Council for selling, as "new milk," an article which contained 25 per cent. of added water. Arthur Bridge, the inspector under the Food and Drugs Act, proved the purchase, and handed in the analyst's certificate as to quality, at the same time adding that the defendant had before been convicted of a similar offence. The defendant pleaded guilty, saying that he was short of supply, and put in some water to sell it as "pudding milk."—Mr. Paul Taylor said this was a very bad case, and fined the defendant £10, or a month's imprisonment in default of distress.

BEESWAX.

At Ashford, Harold Kay, manager of the Ashford Co-operative Stores, Ashford, was summoned for selling adulterated beeswax.—Mr. Keeble, solicitor, who defended, raised the question as to whether beeswax was a drug. He contended that it was not, and that it did

not come within the meaning of the Food and Drugs Act.—Mr. Creery asked him if he could quote a case in support of his contention, and he replied that he should have thought it was a self-evident proposition. They all knew what beeswax was, and what the ordinary uses were to which it was put. In this case, it was sold at what was practically a grocer's shop. He was unable to find any prosecution having taken place in regard to beeswax, and in order to have the point contested, he should ask for an adjournment so that he could call proper scientific evidence in substantiation of the point that beeswax was in no sense a drug.—The Bench decided to hear the evidence, and P.C. Cordery, of New Romney, proved the purchase of a quarter-of-a-pound of beeswax at the stores at Ashford on December 9th.—Supt. Wenham produced the analyst's certificate, which stated that the sample contained equal parts of wax and paraffin. The wax was sold at 6d. for four ounces.—Mr. Keeble said the correctness of the analyst's certificate was admitted, and therefore the evidence of the public analyst would be unnecessary.—Mr. Adams, however, was sworn, and he said there could not be a moment's hesitation in calling beeswax a drug. After giving a definition of a drug, the witness stated that in the British Pharmacopoeia, the official guide for the preparation of medicines, there were no fewer than 12 articles in which yellow wax was used directly, and in eight others indirectly, so that it was the fundamental substance used in the preparation of 20 separate things used as medicines. As a medical man he should say that undoubtedly it was a drug. In cross-examination, Mr. Keeble questioned Mr. Adams respecting the use of water in drugs, and he asked witness if he would call water a drug. Mr. Adams replied that he would not say it was a drug. It was not a pharmaceutical preparation, and water was specially excluded by Act of Parliament. Wax was not a carrier or vehicle used to carry medicine which was administered. It was used as one of the fundamental materials in manufacture of separate pharmaceutical preparations, and undoubtedly it was one of the healing properties.—Mr. Keeble objected to Mr. Adams's evidence being taken as that of the public analyst, and contended that he was present as an expert. It was a matter of surprise to him, he said, that the analyst was present, as it was outside his function. He did not certify the wax as being a drug or food, and the defendant was entitled to an adjournment to settle the point.—Mr. Creery replied that Mr. Adams was present as an analyst, a Fellow of the Royal College of Surgeons and as an expert, and as such he had given his opinion.—In addressing the Bench Mr. Keeble said it was a new thing to him and to the public generally to learn that the universal domestic use of beeswax was not recognised, and that beeswax sold over the counter of a grocer's shop for domestic purposes was treated as a drug and medicine. The Act dealt with two articles—namely, food and drugs. Manifestly it was not a food, and he contended that it did not come within the proper definition of a drug. It was certainly never sold as a drug, but was bought over the counter as a domestic article for polishing tables and chairs. The Bench intimated that the case could be adjourned if the defendant paid the costs of the day, £3 7s. 8d. Mr. Keeble decided to go on with the case, and intimated that he considered it was a matter of great hardship to him, through the analyst being called without notice being given to him.—The manager of the Stores and an assistant, named Frederick Charles Vallens, were called to prove the beeswax had never been sold as a drug, but for the purpose of cleaning furniture, oil cloth and waxing tailors' thread. The former said he was unaware that pure beeswax cost 2s. 6d. per lb. and paraffin 4d. per lb. In the wholesale price list it was quoted at 1s. 6d. per lb., and the sample in question was bought for 1s. 3d. per lb. It had been in stock since September, 1893, and since then from 2½ to 3 lbs. only had been sold.—The Bench imposed a fine of 10s. and £1 18s. 8d. costs, remitting £2 2s. of the analyst's fee.

At Tunbridge Wells, on January 24, before Mr. F. Cleeve, C.B. (in the chair), Mr. W. Browell, Mr. F. W. Elers, and Mr. R. R. Masaroon, Albert Chapman, a grocer, was summoned for selling beeswax said to be adulterated with 50 per cent. of paraffin, at his shop at Pembury.—P.C. Sinden said he purchased the beeswax at Mr. Chapman's grocery shop at Pembury, and Superintendent Bartlett said he sent the substance for analysis, with the result that 50 per cent. of paraffin was traced in the beeswax.—Defendant said he had no idea what the beeswax contained. He just purchased it to sell again.—The Bench said no stain rested on the character of defendant as a very respectable tradesman, not knowing the nature of the article sold, but he must be fined 1s and 10s. costs.

ADULTERATION IN HERTFORDSHIRE.

MR. ARTHUR E. EKINS, public analyst for the county of Hertford, reports:—

"During the quarter ended on December 31, 1885, forty samples of food were submitted to me by your Inspectors.

"They consisted of nineteen samples of butter, seventeen of milk, three of coffee, and one of lard. There were five cases of adulteration: two of butter, two of milk, and one of coffee; and in each instance legal proceedings were instituted, and the vendor fined.

"I am pleased to state that the percentage of adulteration (12·5) is lower than in the corresponding quarter of last year, when it was 17·5, but still it is higher than the average for the rest of England."

LARD ANALYSIS, SOMERSET HOUSE, AND THE PUBLIC ANALYSTS.

In the case of Pearman and Corder, which was a prosecution for selling adulterated lard, dismissed by Houghton Petty Sessions on July 18, 1895, the Certificate of the Durham County Analyst stated:—"I, the undersigned, Public Analyst for the County of Durham, do hereby certify that I received on the 11th day of May, 1895, from Geo. Wilson, a sample of lard, No. 54, for analysis, and have analysed the same and declare the result of my analysis to be as follows:—Lard, 90.00 per cent.; cotton seed oil, 10.00 per cent.; total, 100.00 per cent. As witness my hand this 21st day of May, 1895.—W. F. KEATING STOCK."

The accuracy of this certificate being disputed, the sample was referred to Somerset House, and the following was the certificate of the Chemical Officers of the Inland Revenue Department:—

"The sample of lard, marked No. 54, and referred to in your letter of the 21st ultimo, was received here on the following day, securely sealed.

"We hereby certify that we have analysed the lard, and declare, from a consideration of the analytical results, that we are of opinion that the sample in question contains no cotton seed oil.

"As witness our hands this 10th day of July, 1895.

"R. BANNISTER, F.I.C., F.C.S.

"G. LEWIN, F.I.C."

In consequence of this certificate from Somerset House, Mr. Stock wrote the following letter to Mr. Ralph Simey, Clerk to the Durham County Council:—

Darlington, September 7, 1895.

COTTON SEED OIL IN LARD.

Dear Sir,

1. The County Council, at its next meeting, will probably look for some explanation from me as to the circumstances which led me to certify to a sample of Lard (No. 24 in last quarter's schedule) containing 10 per cent. of cotton seed oil, when at the hearing of the case the sample was declared by three other analysts not to contain cotton seed oil; and on reference to the Chemical Officers at Somerset House this declaration was affirmed.

2. In view of the serious responsibility incurred by myself in this matter, I am anxious to lay before the Council a plain statement of the facts of the case; and although it may be difficult to deal with technicalities so as to avoid confusion, I hope to be able to show the Council that I incurred this responsibility upon what I then thought and still think to be proper and sufficient grounds.

3. For the detection and identification of cotton seed oil in lard, analysts are limited to one test, and one test only. That test is known as the silver test. It is capable of various modifications, but, however applied, the presence of cotton seed oil is revealed by a partial reduction of silver nitrate and a production of a brown colouration, lighter or darker, according to the proportion of adulterant present. When carried out with due precaution the silver test will indicate the presence of even 2 per cent. of cotton seed oil in lard.

4. I have already said that the silver test may be applied in a variety of ways. I have had a large experience of it, having examined by this means considerably over 400 official samples of lard, and I give preference to two modifications. One is known as Conroy's modification, the other is due to myself, and is published in "The Analyst" for 1888. Numerous prosecutions have occurred in the County of Durham which have been based upon the results of this test, and, up to the present case, not one has failed. Many experiments have been made with the silver test in my laboratory, and I never obtained the slightest indication of cotton seed oil in what I knew to be genuine lard. With regard, however, to other modifications of the silver test, one, at least, is confessedly fallacious.

5. Coming to the application of the silver test to the sample in question, I had no hesitation in accepting its indications for I analysed the sample simultaneously with five other official samples which proved to be genuine, and the whole batch was compared with an absolutely genuine lard rendered by myself for the purpose. The test was thrice repeated (by Conroy's modification on the sample in question, and finally the presence of cotton seed oil was confirmed, and the proportion determined by my own method of analysis.

6. At the hearing of the case several other tests were mentioned as being confirmatory of the presence of cotton seed oil or otherwise. They may be taken in the following order:—

The density of the sample at the boiling point of water.

The action of chloride of sulphur.

The percentage of iodine absorbed (a) by the lard itself, (b) by those acids of the lard which form metallic salts soluble in ether.

The amount of heat evolved on treatment with strong sulphuric acid under fixed conditions.

The solidifying point of the fatty acids,

The deviation of a ray of light traversing the melted fat in an instrument known as the Oleo-Refractometer.

7. The confirmatory value of these tests in presence of a considerably large proportion of cotton seed oil must be admitted, but, unfortunately, the natural variations in the composition of Lard, as derived from different parts of the hog, are such as to render it absolutely impossible to establish by the employment of any or all of them the presence of a quantity not exceeding ten per cent. That is to say their indications in such a case would not be abnormal to a genuine article; so that in such a case the analyst must either rely upon a positive indication like the silver test or he must accept the indications of a number of negative tests which he knows are only confirmatory in the presence of a very considerable proportion of the adulterant. But I must here repeat that, with the exception of the silver test, none of the tests even pretends to indicate the presence of cotton seed oil. All they do is to confirm the presence of a considerable proportion of *some* vegetable oil, but it is left to the silver test to say absolutely whether that oil is cotton seed oil or not.

8. I hope that what I have already said, when taken in conjunction with the amount of work which has from time to time been executed and published from this laboratory on the general subject of lard adulteration, will serve to assure the Council that in issuing my certificate I did so neither in ignorance nor in want of judgment.

9. On the 12th of June the Chief Inspector wrote to me asking my opinion as to the desirability of having expert support for the prosecution. But I was so sure of the accuracy of my analysis that I declined on the ground of expense to the county, and suggested that, in the event of reputable expert witnesses appearing for the defence, the prosecution should ask for the sample to be referred to the Chemical Officers at Somerset House, and this course was actually taken. Now, however, expert support has become necessary, and I have submitted the remaining portion of my sample to Mr. Alfred H. Allen, of Sheffield, with a request that he should test the same for cotton seed oil. At the same time I asked him to review the technical matter contained herein. Mr. Allen is the Public Analyst for the West Riding of Yorkshire, the City of Sheffield, and many other important places. His experience of the analysis of oils and fats is probably unique, and his reputation as a food analyst is world-wide. Mr. Allen has been good enough to favour me with a letter, which I now beg to enclose.

Yours faithfully,

W. F. KEATING STOCK.

LETTER FROM WEST RIDING COUNTY ANALYST.

Public Analyst's Laboratory,

67, Surrey Street, Sheffield,

September 6th, 1895.

W. F. Keating Stock, Esq.

Dear Sir,—I have duly examined the sample of Lard, marked "No. 54, B. S. E.," received from you on the 9th ultimo, and, as stated in my letter of August 20th, certainly think you had ample grounds for reporting it to contain cotton seed oil. I have tried on it the Conroy modification of the silver test, which is that which I habitually employ, and am quite satisfied that cotton seed oil is present. Of course the case is one of those familiar to us chemists, where the adulterant is not actually isolated or seen—as chicory can be seen in coffee, or beef-fat in lard—but where the presence of the foreign substance is deduced from its effects on a chemical reagent. I have had occasion to investigate the various modifications of the silver test very thoroughly, and am fully satisfied of the reliability of the Conroy form as a method of detecting cotton seed oil.

I agree with you that the other tests mentioned in your letter are of considerable value for confirming the presence of cotton seed oil in lard, when its presence has once been definitely detected by the silver test; but they do not in themselves permit of the recognition of cotton seed oil in a lard containing only a moderate proportion, say 5 to 10 per cent., and do not differentiate between this and other possible adulterants. Hence reliance on such tests solely, or on such tests supplemented by an imperfect form of the silver test, will necessarily result in failure to detect the adulterant.

Differences of opinion with one's brother-analysts are necessarily

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very annoying, and especially so when, as in the present instance, you have such ample grounds for condemning the sample.

You are at liberty to make any use you choose of this letter.—
Yours very truly,

ALFRED H. ALLEN.

The unsatisfactory state of things above disclosed led to the following correspondence being entered into with the Inland Revenue Department:—

Exchequer Buildings, Durham,
4th October, 1895.

Sir,—On behalf of the County Council of Durham, I transmit to you enclosed herewith a print of the certificate of the Durham County Analyst and of the Chemical Officers of the Inland Revenue Department with reference to a specimen of lard which they have recently had under analysis, and also a print of letters from the Durham County Analyst and the West Riding County Analyst relative thereto, and I have to ask you to be good enough to furnish me, for the information of the Durham County Council, with a statement of the analytical results referred to in the certificate of the Chemical Officers of the Inland Revenue Department.—Yours faithfully,

RALPH SIMEY,

Clerk of the County Council.

The Secretary, Inland Revenue Commissioners.

Inland Revenue,

Somerset House, London, W.C.,

16th October, 1895.

Sir,—The Board of Inland Revenue have had before them your letter of the 4th instant, enclosing a copy of the Certificate of the Durham County Analyst and of the Chemical Officers of this Department with reference to a specimen of lard which they have recently had under analysis, and also a copy of letters from the Durham County Analyst and the West Riding County Analyst relative thereto.

I am directed to acquaint you, in reply, that the Board's Chemical Officers agree with the Durham County Analyst in regarding the special silver reaction, referred to in paragraphs 3 and 4 of his letter of the 7th September last, as a distinctive test for the presence of cotton seed oil, and that, when they applied this test under conditions which would have revealed its presence had this oil been mixed with the lard, the result obtained was conclusive as to the lard's being free from cotton seed oil.

Your obedient servant,

W. B. HEBERDEN, Secretary.

The Clerk of the County Council,
Durham.

Exchequer Buildings, Durham,
21st October, 1895.

Sir,—I have to acknowledge the receipt of your letter of 16th inst., and to inform you that having communicated it to the County Analyst, he has written me a letter, dated 19th instant, relative thereto (of which I enclose copy), and I have to ask you to be good enough to inform me whether or not the Inland Revenue Board can see its way to furnish the information he asks for.

I shall be obliged if you can favour me with an answer to this question not later than the end of this week in order that it may be laid before the ensuing quarterly meeting of the County Council.—
Yours faithfully,

RALPH SIMEY,

Clerk of the County Council.

The Secretary, Inland Revenue Commissioners.

Inland Revenue,

Somerset House, London, W.C.,

28th October, 1895.

Sir,—With reference to your letter of the 4th instant, I am directed by the Board of Inland Revenue to transmit to you the enclosed copy of a report which has been made by the Principal of the Government laboratory.—Your obedient servant,
Ralph Simey, Esq.

W. B. HEBERDEN, Secretary.

RRPORT.

In applying the silver test, 10 grammes of the melted and filtered lard are taken, and to this 10 cubic centimetres of amylic alcohol are added, together with 2 cubic centimetres of an alcoholic solution of silver nitrate. The mixture when agitated is placed over an opening of a water bath kept at the boiling point. The reaction is noted at each ten minutes up to half an hour, when the change, if any, is deemed to be complete. Should the result appear of a doubtful character a portion of the lard is saponified and the fatty acids obtained tested in the manner above described.

The lard is always tested in duplicate, and at the same time the three following controlling experiments are also performed under exactly similar conditions:—

1. 10 Cubic centimetres of the amylic reagent + 2 cubic centimetres of silver solution.

2. 10 Cubic centimetres amylic reagent + 10 grammes genuine lard + 2 cubic centimetres silver solution.

3. 10 Cubic centimetres amylic reagent + 10 grammes lard to which has been added the alleged percentage of cotton seed oil if known.

The silver test solution is made at the time, and consists of silver nitrate in nearly absolute alcohol, in the proportion of 1 gramme of the former to 200 cubic centimetres of the alcohol.

It is of importance that the two alcohols used should be carefully purified so as to be as free as possible from all reducing action on silver nitrate.—(Signed) T. E. THORPE.

Laboratory, 28th October, 1895,

County Analyst's Office, Darlington.

21st December, 1895.

Dear Sir,—On the 29th October last, you handed me a copy of

the process for the detection of cotton seed oil in lard, which you had that day received from the Chemical Department at Somerset House.

I have now to inform you that after experimenting most carefully with the process, employing for that purpose chemicals whose purity admits of no question, I have found it to give results which are, in my opinion, not only unsatisfactory but misleading. Tested by this process, a sample of freshly prepared and absolutely pure lard gives an indication which corresponds to an addition of 5 per cent. of cotton seed oil, and with genuine commercial lards even a greater proportion is indicated. The details of my experiments would be tedious, and considering my position in this matter perhaps out of place. However, happily, I am not compelled to ask the County Council to judge between myself and the Chemical Officers at Somerset House.

On 2nd November, I forwarded a copy of the process (omitting its place of origin and Dr. Thorpe's signature) to a number of Public Analysts of high repute, giving them no information whatever except as follows:—

"Will you kindly try the enclosed process for the detection of cotton seed oil in lard. I should be glad to have your opinion as to its value where the proportion of cotton oil runs to 5 or 10 per cent."

I enclose replies received from eight gentlemen whose skill and experience is recognised by the whole body of public analysts. I make no comments upon these replies; they speak for themselves. All I wish to do, in conclusion, is to say that, as a public analyst and as a chemist of 31 years' experience, I recognise the value and necessity of a Court of Appeal, but I feel that the test methods used by that court should be methods of unquestionable accuracy, and that when the certificate of a public analyst is contravened by the chemical officers at Somerset House it should not be done by means which are in themselves open to the gravest question.—Yours faithfully, W. F. KEATING STOCK.

The Clerk of the County Council, Durham.

From ALFRED A. ALLEN, public analyst for West Riding of Yorkshire. Sheffield, Chesterfield, Barnsley, Batley, Doncaster and Rotherham.

I have obtained a fresh supply of amylic alcohol from Messrs. Baird and Tatlock. I shook it with acidulated brine, separated and fractionated, and employed the fraction distilling between 128 and 131 degrees for your modified silver test. I am sorry to say that I cannot make it work. There is a barely perceptible difference between the result obtained with genuine lard and that to which I have added 10 per cent. of cotton seed oil, while an addition of 5 per cent. is not recognisable at all.

These results were obtained under the most favourable circumstances. That is, the lard was fresh, and the cotton seed oil was the ordinary commercial article. If the cotton seed oil were treated in the manner usual when intended for the adulteration of lard, its reducing action on silver is, we know, materially lessened; while, on the other hand, exposure to air gives lard a power of reducing silver. Under the best circumstances the test is, in my hands, of very doubtful value, and in the conditions obtaining in practice would, I fear, fail entirely.

The same samples which gave such unsatisfactory results by your modified test, answered perfectly with the ordinary Conroy.

I may say that samples of amylic alcohol which had not been specially purified were found to reduce silver to such an extent as to render them unfit for use. To avoid error, therefore, it seems to me essential to make sure that the commercial article gives a negative result, and to get rid of the excessive quantities of lower alcohols and water which are sometimes present.

I am sorry that I cannot report more favourably.

From J. CARTER BELL, public analyst for Cheshire, Salford, Birkenhead, Congleton, Staleybridge, and Glossop:—

I have now completed a trial of the process for the detection of cotton seed oil in lard which you sent me on 3rd November, 1895.

I cannot say that I am satisfied with the process. It seems to me that the weak point of the whole thing is the very distinct colouration which the reagents therein prescribed give with what I know to be absolutely pure lard.

For this colouration an allowance must be made which would differ probably with different samples of lard. We, as public analysts, know nothing of the origin of our samples, and these two facts introduce into the process you describe an element of uncertainty where the adulterant is present to the extent of, say, from 5 to 10 per cent., which to my mind is most unsatisfactory.

I have made comparative tests with my own method, which is very similar to that of Conroy, and I consider its indications much more reliable than those of the method you have sent.

From CHARLES E. CASSAL, Public Analyst for St. George's, Hanover-square, Kensington, and Battersea, Lincolnshire (Kesteven Division), and Chipping Wycombe.

I have tried your method of working the cotton seed oil business, and so far as I can judge from the few experiments which I have been able to make up to the present, it appears to me to work satisfactorily when the fatty acids are employed. I am not quite so satisfied when the test is applied to the original stuff. Would you kindly let me have a small sample of the cotton seed oil you have employed for your experiments? I am certainly strongly of opinion that your method is a very good way of applying the test. I have just got a wasted reaction with a sample of butter adulterated to a small extent with margarine (operating on the fatty acids), and, of course, the amount of cotton seed oil present in the case must be very small.

From BERNARD DYER, Public Analyst for Leicestershire, Rutland shire, and Truro, came the following chaotic reply:—

I have tried the modification of the silver test you sent me, not in a mixture of lard and cotton seed oil (which I have no doubt, even if the cotton oil were in small proportion, would darken it), but on a sample of pure lard made by myself, which has been lying by for some time in a stoppered bottle, exposed to indirect light.

This gives a strong darkening, similar to that of cotton seed oil, so that the process, as you use it, does not avoid the confusion which has gone so far—as first shown by Bevan—to interfere with the value of the silver test.

What we want, it seems to me now, is some reaction to distinguish between lard exposed to light and lard mixed with cotton seed oil.

If I am not mistaken, amylic alcohol was used in the original form of the silver test, together with something else—a something of doubtful value—colza oil, if I recollect rightly, though I have not looked the point up.

From E. W. T. JONES, Public Analyst for Staffordshire, Wolverhampton, Walsall, Kidderminster and Newcastle-under-Lyne:—

I am so busy as hardly to know what to do first. I have forced myself to-day into your matter following out your instructions to the letter, but I am not impressed with the procedure, neither did the results with a five per cent. mixture come out so decidedly as with my old way of working, practically on Conroy's lines—it may be my fault, but so it is.

From JOHN PATTINSON, Public Analyst for Northumberland, Cities of Durham and Newcastle-on-Tyne, Gateshead, South Shields, Tynemouth, and Berwick-upon-Tweed.

I have tried the method of testing for cotton seed oil described in the letter you sent on 2nd instant. I made mixtures of lard containing 2½, 5, and 10 per cent. of cotton seed oil. I have, however, failed to find with the amylic alcohol we have used that there is any colour indication given with the exception of the sample containing 2½ per cent. which gave a slight yellowish colour.

At the same time, we tried the method described by me in a paper printed in the Soc. of Chem. Ind. Proc., January 31, 1889. In this method on alcoholic solution of silver nitrate is added to an ethereal solution of the lard. The different amounts of cotton seed oil present were very proportionately indicated by this method.

Colour tests with nitrate of silver in lard, however, are sometimes misleading, as I think other substances sometimes present give the same reaction as cotton seed oil. Rancidity, I find, gives this indication, so that it is scarcely safe to depend entirely on this indication.

From F. M. RIMMINGTON, F.C.S., Public Analyst for Dewsbury and Bradford:—

I must apologise for the long delay that has taken place in reply to your circular, but owing to pressure of other matters, we have not been able to attend to it so promptly as we could have wished. As to the results you will be able to form your own opinion. In my opinion the indications of the test are not so distinct as is desirable.

Should there be anything else we can do in the matter, we shall be glad to do it.

CERTIFICATE OF ANALYSES.

SAMPLE OF	No.	1st ten mins.	2nd ten mins.	3rd ten mins.
Genuine Lard	1.	No change	Spoilt	Spoilt.
Amylic Alcohol	2.	No change	Spoilt	Spoilt.
Genuine Lard	2.	do.	No change	No change.
Genuine Lard	2.	do.	do.	do.
Amylic Alcohol	2.	do.	do.	Very slight
Lard + 5 % cotton oil	3.	Darkened	Distinctly dark.	Same as 2nd.
Lard + 7.5 % cotton oil	4.	Darker than No. 3	Slightly darker.	
Lard + 10 % cotton oil	5.	Darker than No. 4	Slightly darker.	
American Lard	6.	No change.	No change	No change.
Amylic Alcohol	6.	Very slight	—	—
American Lard + 5 % cotton oil	7.	Slightly darkened	Slightly darkened	Slightly darkened.
American Lard + 7.5 % cotton oil	8.	Darker than No. 7	Slightly darker.	—
Official Lard	9.	No change	No change	No change.
Fatty Acids of Official Lard	10.	Very slight	—	—

From T. STEVENSON, M.D., F.R.C.P., F.I.C., F.C.S., Public Analyst for Surrey, Bedfordshire, Tunbridge Wells, Reigate, St. Pancras (Middlesex), St. Leonard (Shoreditch), and St. Olave (Southwark).

I have tried your process on a lard specially procured from a pig killed about a fortnight ago.

The pure lard yielded in 30 m. a mixture which had a faint mauve tint only.

The same lard with 5 per cent. cotton seed oil yielded a tint which only slightly increased between 20 and 30 minutes. The colour after 30 m. is just like that of slightly weak coffee and milk infusion—a breakfast drink.

With 10 per cent. cotton seed oil, the colour was similar but deeper. I must confess that there was a trace of reduction, a slight mauve mirror with the amyl alcohol alone.

You did not tell me what to expect from the test—probably advisedly.

The test is a promising one.

Exchequer Buildings, Durham,
2nd January, 1896.

Sir,

Adverting to your letter to me of 28th October last, I send you, enclosed herewith, copies of a letter I have received from the County Analyst, dated 21st ultimo, and of letters addressed to him

by eight other public analysts; and I beg to state that, of the remaining five to whom he sent the process, three made no trial of it, and two did not answer at all.

The subject will come again under the consideration of the County Council on Tuesday, 21st instant; and I have to ask you to be good enough to favour me by 17th instant with any observations which the Inland Revenue Commissioners desire to make with respect to it.

Yours faithfully,

Ralph Simey,

Clerk to the County Council.

The Secretary,

Inland Revenue Commissioners.

Inland Revenue, Somerset House,

London, W.C., 15th January, 1896.

Sir,—The Board of Inland Revenue have had before them your letter of the 2nd instant, enclosing a copy of a letter which you have received from the Analyst for the County of Durham, and of letters addressed to the County Analyst by 8 other public Analysts in reference to the process adopted at the Laboratory at this office for the detection of cotton seed oil in lard.

I am directed to acquaint you, in reply, that the Board do not feel called upon to criticise the reports of the Analysts in detail. They would, however, point out that there is direct and positive evidence in the reports as to the value of the test as applied in the Government laboratory, and the Board are disposed to think that all the analysts named might, with proper reagents and with more experience in the application of the test in question, reach the degree of proficiency shown by Messrs. Rimmington, Cassal and Stevenson.—I am, sir, your obedient servant,

W. B. HEBERDEN, Secretary.

Ralph Simey, Esq.

SEIDLITZ POWDERS.

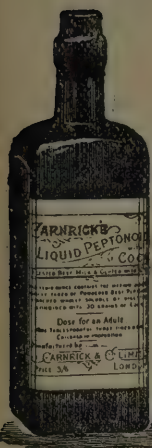
At the Brentford Police-court, on January 27, Mr. Walker, the solicitor for the defence in the recent prosecution of an Ealing chemist for selling seidlitz powders which were not of the nature, substance, and quality demanded, applied to the Bench to grant a special case for the consideration of the High Court. He said that, as the prosecution had excited considerable interest all over the country in consequence of the important questions of law which had been raised, it was very desirable to have the decision of the superior tribunal. Mr. Montagu Sharpe said the legal points stated in the written application did not, in the opinion of the magistrates, appear to have a very important bearing on the case. Mr. Walker said the point of law he desired to raise was whether the summons on the face of it disclosed any offence under the 6th section of the Food and Drugs Act. The Chairman of the Bench replied that the magistrates could not re-open the question, as they had already decided it. Mr. Walker said the offence alleged was that of selling a powder which was larger than that prescribed in the "British Pharmacopoeia." The chairman said the magistrates had carefully considered the points set out in the written application, and, in their opinion, they were frivolous. They had, therefore, decided to refuse the application. Mr. Montagu Sharpe subsequently had a private conversation with Mr. Walker, and, on resuming his seat on the Bench, said, if Mr. Walker would submit the application in another form, they would probably consider it favourably. If this were not done, the expense and trouble of applying to the superior Court for a *mandamus* to compel the magistrates to grant a case would probably be incurred. Later in the day Mr. Walker handed in an amended application asking for a case on the ground that the chemist did not commit an offence under the Food and Drugs Act in that being asked for a box of seidlitz powders he supplied a powder of the same ingredients and in similar proportions to the tartarated soda powder prescribed in the "British Pharmacopoeia," but containing a larger quantity of such compound than was there specified. The chairman said the Bench would consent to grant a case on the point thus stated.

LIMEHOUSE ADULTERATION.

THE report of the analyst for the quarter ending 31st December, 1895, was read. From this it appeared some samples of butter analysed contained 63, 90, and 97 per cent. of foreign fat respectively. Fines were imposed in the first two cases, but owing to some informality in the purchase of the third, it was thought advisable not to take proceedings. One sample of milk was found to be deficient in cream to the extent of 88 per cent., while one was found to contain added water to the amount of 8 and another to 11 per cent. The dealers were also fined in these cases.

"SYNDING" THE "LUGGIES."

A MEARNS farmer came before Sheriff Fyfe at Glasgow on Jan. 27. His name was James Allison, Malletshead, Mearns, and he was charged at the instance of the Sanitary Department with having on Tuesday, 24th December, delivered skim milk to a dairyman in the city which on analysis was found to contain 10 per cent. of added water. Samples of the milk were procured in course of delivery by Inspectors Hamilton and Armstrong. Accused pleaded guilty, and Mr. Robb, writer, explained that it was the habit in country farms to "synd" the "luggies," and this must have been the cause of the adulteration. Sheriff Fyfe, considering that this was the first offence, imposed a fine of £5.



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M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

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Food and Sanitation.

SATURDAY, FEBRUARY 8TH, 1896.

THE LAW AND DR. ANDERSON.

ONCE again Dr. Anderson has made an attempt to get justice for the blackguardly wrong done him by a

judge, and he has again been shown that the law is a close corporation of persons, whom Goldsmith aptly described as pests of society. The first of living dramatists a few years ago said:—

"The law is the true embodiment
Of everything that's excellent."

But Mr. Gilbert also pointed out that it assumed that:

"A rogue or a thief

Is a gentleman worthy implicit belief

Because his attorney has sent me a brief."

Mr. W. S. Gilbert, having studied the law, had the natural loathing for its barefaced impostures and rogueries that is felt by the right-minded for knavery.

For what is the origin of the Bar? Beginning by thrusting himself unwanted upon litigants, and trusting to their generosity to drop a dole into the cadging pocket affixed to the back of his gown, the needy "clerk," licensed bravo, liar by trade, willing to hire himself out to anyone, and use every knavish wile to increase the amount of the charity bestowed upon him, has developed until he has become the most powerful, the most arrogant of rogues. He is the only knave in the kingdom who can obtain money by false pretences, and who cannot be punished for the theft. He can take from one guinea to a thousand or more as a fee to plead a cause, pocket the money, and not fulfil the bargain. Indeed, we know a recent instance where an ex-law officer of the Crown received a special attention fee of two hundred guineas, and when he should have been fulfilling the duty he was paid to perform he was engaged in another court in a divorce case for which he had a second special fee. But he could not be proceeded against for obtaining money by false pretences, and the Right Hon. Gentleman's conscience is so sensitive that he couldn't think of returning the filched fee.

We have seen and had more brushes with the law than has Dr. Anderson, and our advice to him is "drop it." Dickens pictured what the wrong and the worry of the law is, and the "man from Shropshire" and "Miss Flite" may be seen every day vainly pleading for justice from those who do not know what it means; seeking for the righting of wrong from promoted fee thieves, and being driven by brooding over their grievances into a state of frenzy that much delights the legal Fagin's young disciples. Those who would promote real justice in England should seek to abolish, lock, stock and barrel, that hot-bed of thievery, the Bar. It is the solicitor who understands and prepares a case for the courts, and he is far more capable to state the case properly than the gang who obtain money by false pretences. If he commits an offence against honesty he can be dealt with, but a barrister is inviolate. It is from this inviolate body, trained in every chicanery and rascality that the bench is manned; they overrun the House of Commons and they are the supreme power in the House of Lords. As well may the mouse ask mercy from the cat as Dr. Anderson ask one body of judges to give away the swindle and weaken their combination by condemning a brother judge, howsoever villainous that judge's conduct may have been. And the curious thing about the whole swindle is the barrister has no legal *locus standi* whatever. He is a parasite, whose appearance in any legal case might be objected to, for there is no law entitling him to pursue what Goldsmith called his career as a pest.

Secure in the sympathy and honour of his fellow

medical men, Dr. Anderson would be better advised were he to let legal knavery lie, as it has ever done, and follow the footsteps of the Mighty Healer of the Universe. His calling is the alleviation of human suffering, whilst it is the business of the law to cause crime, misery, and want. Those are the more blest who avoid the law, for it is hard to touch pitch and come away undefiled.

WOMAN SWEATING IN KENSINGTON.

THOSE who hold the belief that, in these days of "Gwallia" and "Heavenly Twins" filth, there is a great opening for the modest girl and the virtuous wife, have noted with some satisfaction that female emancipation has not entirely given itself up to the production of disgusting trash—miscalled literature—and that there are women whose activities lead them to study questions and become experts in professions useful to humanity. We are amongst those who welcome the earnest women who have qualified for Sanitary Inspectorships, and who believe that every important local authority should have at least one woman inspector. But we do not think it manly or just that the fact of a woman adopting this calling should be a reason for paying her at a less rate than a male inspector, and we thoroughly endorse the protest of "The Queen" against the action of the Local Government Board in sanctioning the appointment by the Kensington Vestry of a woman sanitary inspector at the insufficient salary of £80 a year. Our contemporary says:—

"As we pointed out in an article last week, it is impossible for a public body to expect generous and devoted service from a woman who is engaged under such illiberal conditions. She is expected to be an educated woman, a professionally certificated woman, a woman of good manners and appearance; she must live in Kensington, and she must not employ extraneous means of adding to her pittance. The injustice of these conditions becomes patent if we observe the salaries that are paid to men for the same work: £110 is, so far as we are aware, the lowest commencing salary for a certified sanitary inspector in any of the London districts; £120, £130, £140, and £150 are paid in several districts, and yearly increments in some cases eventually bring up these salaries to £200 or more. Bermondsey, which gives its inspectors from £130 to £350, is an extreme instance of liberality; Kensington, which offers its men inspectors from £110 to £160, approximately reaches the nethermost limit of parsimony. But this disparity of treatment is absurd. If a vestry district has comparatively few workshops, it should employ few inspectors, but whether the inspectors be few or many, they should be equally capable, and should be paid at an equal rate. And that a capable woman who, single-handed, undertakes the inspection of all the women's workshops in a vast district such as that of St. Mary Abbott's, Kensington, should be paid £30 less than a man who is allotted only a section of the parish, is an inequality and an injustice against which it is urgently necessary to protest."

Our contemporary is right. If a woman does equal work, she has a clear claim to equal pay with a man. The action of the Kensington and St. Pancras Vestries is bringing into public service the mean doctrines and practices of the John Brights and Mundellas, in whose political economy the fact that the female mill operative did not smoke as much, drink as much, eat as much, or generally be so extravagant as the male mill operative is held to justify her being paid at least twenty-five per cent. less for the same work. And those who do these things prate about ideals of womanhood, charity and chivalry. It is a question not without ominous importance to sanitary

inspectors, for once the practice of thus sweating female sanitary inspectors is recognised, it will be followed by other local authorities, who will employ more female inspectors, or use the fact to reduce the salaries of the male inspectors they may require. The medical woman is not expected to take a less fee than the medical man, nor is the female novelist asked to do her writing for less than the male novelist, and the Local Government Board has not done well to sanction these unfair innovations.

SIR GEORGE NEWNES, LIMITED, AS SIR ORACLE.

It is very kind of the great *Tit Bits* and *Westminster Gazette* M.P., to educate us upon all kinds of questions, and in "The Oracle Encyclopædia" the great man has even surpassed any of his previous banalities. Under the heading "Anthrax," he says, "Anthrax is a term used in surgery for what is known as carbuncle."

According to the census of 1891 the number of Irish-speaking persons in Ireland was only 680,157. But Sir George Newnes (Limited), M.P., knows better. He says:—"In Ireland, though the Gaelic has been from the beginning of the English invasion denounced and discountenanced in every way, it is still dearly cherished by fully three millions of the people, who speak no other tongue." An oracle truly, but this is the sort of curiosity with which we fill our House of Commons. We expect shortly to have explanations of "tripod" fever and "haricot" veins.

BACTERIA AND THEIR BENEFICENT AND HARMFUL RELATIONS TO MAN.

By M. V. BALL, M.D., PHILADELPHIA.

(A lecture delivered before the Franklin Institute, Philadelphia, and reprinted from the Journal of the Institute.)

BACTERIOLOGY is, comparatively, a recent science. Only within the last ten years has it received any special attention, and within this time it has been given a place in the medical colleges, and become recognised as an important department of knowledge.

Municipalities are forming laboratories for bacteriological work, and governments are instituting, on a large scale, researches which must eventually be of great service to mankind. It is hardly to be expected that this subject should as yet be the common property of any but those who have made it a special duty, and, therefore, a few words as to the nature of bacteria will not be out of place here.

Bacteria—from the Greek, meaning little or minute rods—is a term applied to various forms of organisms, microscopic in size, closely allied to the lower types of fungi and algæ: usually containing no chlorophyll; capable, in many instances, of propelling themselves with swift motion through the liquids in which they are found, and possessing, for this purpose, small cilia or flagella, like other types of microscopic plants.

They are very minute, requiring for their detection powerful lenses. Some idea of their size may be obtained from the statement that in the space of an inch from 15,000 to 20,000 can be placed side by side; but, growing together in large numbers as they do, such aggregations or colonies can readily be seen with the unaided eye, though the individual members of these colonies cannot be recognised.

Bacteria are neither yeasts nor moulds, though possessing some of the characters of both.

The name "bacteria" is not a good one, since other than rod-shaped organisms are collected under this group. Micrococci are globular or spherical bacteria; bacilli are the rod-shaped bacteria; and spirilli are spiral-formed or twisted bacteria. The colonies of one form are not to be distinguished from the others, but under the microscope the difference in shape is readily made out.

Bacteria are quick breeders; they multiply very rapidly. From one or two germs thousands are obtained in the course of a few hours. Someone has made the calculation that a single germ, if uninterrupted in its growth, would fill an ocean with its progeny in five days; but, fortunately, it

digs its own grave by the poisons it generates, and so puts a limit to its growth. Some require several days before germination occurs. Two kinds of growth are known. In one, reproduction is a process of fission or segmentation—one bacterium dividing itself into two, and each of these again sub-dividing—in reality, a continuation rather than a reproduction. The second kind is known as sporulation. The germ gives rise to a spore, the spore then takes on a separate existence, and, when the conditions favourable to maturation exist, it gives rise to a new germ.

Both forms of growth are utilised by the same bacterium. Under ordinary conditions it multiplies by fission when a permanent form is advantageous, or, as some think, when the soil is particularly rich, it produces spores. Spores have not been found in all bacteria; those possessing them are very resistant to all physical and chemical agencies, and withstand a high degree of heat without being destroyed.

For the different bacteria different conditions are necessary. Just as different plants require different kinds of soil and temperature, so these minute plants re-act differently and demand for their growth various surroundings. Some are not at all particular, and flourish on any sort of soil. They are like weeds that grow without attention. Others again are as sensitive as hothouse plants, and require very carefully prepared media and a suitably-regulated temperature. While some species demand a plentiful supply of oxygen, others grow only when this is excluded. Sunlight is usually destructive; an alkaline medium is better tolerated than a neutral one, and acids are usually harmful. Moisture is necessary to growth.

Bacteria are not only disease producers—they manufacture a host of products beneficial and essential to life. Life itself depends in a great measure upon the actions of these minute plants, which transform the complex molecules into their elements and make them fit for assimilation. If we could separate the industrial germs from the pathogenic or disease producers, and domesticate the former, while we drive the latter out of existence, life would be more worth the living. This is gradually being attempted. Scientists are pointing out to us the methods of cultivation, while hygienists and therapeutists are doing all they can to exterminate the destroyers of life, so that we can already see how, in a few years, cholera will be a rare disease and tuberculosis will no more be counted as the cause of one-fifth of all deaths.

What advances, if any, have been made in recent years, as relate to the subject of Foods? This is the topic I have been asked to consider: "Bacteria in Their Relation to Food."

First of all, I desire to take up the most important of foods, namely, Water. Water is a food because it is necessary to sustain life, and, considered in this sense, air might also be classed as a food. But whether or not we call water a food, there are other reasons sufficient for us to make it a matter for consideration here.

Formerly a good water was one which came up to a certain chemical standard. The amount of chlorides and nitrates was determined, the hardness was computed, and the total amount of solids ascertained. If a water did not contain more than one grain of chlorine per gallon it was deemed potable. To-day, while chemical analysis still has an important place in the examination of water, it must go hand in hand with the biological or bacteriological analysis, and we must know what sort of living organisms inhabit or are to be found in the specimen in question.

In the early days of bacteriology much stress was laid upon the number of bacteria found in a given quantity of water, and water containing more than 500 colonies to the cubic centimetre was deemed unfit for drinking, but now it is not so much the quantity as the quality of the bacteria that is looked for. One typhoid bacillus in a gallon of water is more dangerous than one million ordinary water bacteria; in fact, it would render the water impotable, while the latter would be harmless. Thus, the water analyst of to-day must be a competent bacteriologist as well as chemist, and to be a bacteriologist means a pathologist as well, for in the investigation of bacteria animals must be used for experiment, and the nature of the diseases caused by the bacteria must be known to the experimenter.

As in the earlier chemical analyses, the chlorine itself was not considered dangerous, but simply one of the indications of faecal contamination, so in the bacterial examination the presence of certain harmless germs may indicate dangerous contamination. For instance, the presence of the bacilli commonly found in human faeces, which in themselves are non-pathogenic, would, of course, lead one to infer that human sewage had become mixed with the water supply.

The methods for the detection of typhoid bacilli in drinking water leave much to be desired. The examination is often undertaken too late, when the bacilli are no longer present, or have been destroyed by the ordinary water bacteria. Typhoid bacilli do not live long in ordinary drinking water, and yet if the water be contaminated with them a whole city or district can become infected in a short time, and when suspicion is directed to the water the germs have disappeared. To a less degree this is likewise true of the cholera spirillum, which acts so quickly and is so deadly, and which usually is spread through the drinking water.

A method lately described, and which promises success, is to take a large quantity of the suspected water (200 cubic centimetres), and add to it 2 grams of peptone and two grams of chloride of sodium. Place this in the incubating oven, and if cholera germs are present they will multiply rapidly, so that they can readily be detected in the course of ten or twelve hours.

Bacteric examinations have been most useful in the testing of water filters, "germ-proof" filters, etc. Several filters are now in the market which claim to be germ-proof, that is to say, which are supposed to prevent the passage of bacteria through the very minute pores of the filter. These filters are made of baked clay, infusorial earth, porcelain, etc. As a rule, they can deliver a germless water only for a few days in succession, when, owing to the activity of the bacteria which have collected on the surface of the filter cylinder, the pores are penetrated by the growth and more bacteria than usual find their way into the water. This in some cases can be prevented by a careful cleansing every few days of the filter tube. All tubes are not alike, and some afford no protection at all, though they clarify the water by keeping out the grosser particles of dirt.

Filters are best tested by adding to the water before filtration some well-known bacterium (usually the red pigment-forming and rapid-growing *Bacillus prodigiosus*) making cultures before and then after filtration. If under suitable precautions the germ is found present in the filtered water, the filter is imperfect. In the testing of large filtering plants, where it is not expected that the water will be perfectly free from germs, quantitative methods must be used in order to tell what percentage of bacteria is left behind.

These large filtering plants are in use in several cities, and, it seems to me, they are of doubtful value only. It is true, the water is more pleasing to the eye, and for toilet and laundry purposes more valuable, but if the water is contaminated with disease germs there is no surety that they will be among the 50 per cent filtered out. They are just as liable to pass through as the others, and such a water is not safe. From the sanitary point of view, filtering plants are only valuable when the water is uncontaminated by human sewage, and to erect such a plant in our cities, without paying any attention to the source of our water supply, and even allowing it to be polluted along its whole course, will hardly reduce the death rate, though it may add to the æsthetic quality of the water.

On an average, 500 deaths occur every year in this city (Philadelphia) from typhoid fever. This means at least 6,000 cases. From an economic point of view, the persons affected are the most valuable members of society, chiefly young adults between the ages of twenty and forty. The expense, in loss of time, medical attendance, etc., is at least \$100 for each case, a total cost of \$600,000 yearly from this one disease, to say nothing about the loss of life, and all because we are obliged to drink the sewage of half a dozen towns above us, and the drainings from graveyards and pigsties along the banks of the Schuylkill. And while we are thus treated by the cities above us, we send our sewage to the towns below. Some strict measures must be put into practice which will prevent this pollution of our drinking water.

The second important article of food, with which bacteriologists have busied themselves, is milk. A good milk must contain a certain amount of solids and fat, but it can be adulterated with far more harmful matters than water, and these other adulterations are not so readily detected.

A few hours after milking, ordinary milk has been found to contain 1,000,000 germs to the cubic centimetre. How did these get in?

If the udders of the cow are not kept clean, the first flow of milk will wash the dirt into the milking-pan. If the man who milks the cow is uncleanly in his habits, using dirty hands in the operation, the milk receives this dirt. If the stall is the place for milking, and other animals are moving about, the dust raised falls into the open pail and contaminates the fluid; and, finally, in the transportation from

the farmer to the collector, from the dealer to the customer, a hundred opportunities present themselves for the entrance of bacteria, which, when once in, thrive abundantly, the milk being a rich and suitable soil for their growth.

In the markets of Halle, Berlin, and Leipsig, Ranke succeeded in finding, in the milk exposed for sale, considerable quantities of cow dung, which, of course, greatly increased the number of germs to the cubic centimetre—in one case up to 169,000,000.

Bolle, the milkman of Berlin, who sells 60,000 quarts of milk daily, has endeavoured to make his large establishment conform to scientific requirements. He has a competent bacteriologist, who makes frequent examinations of the product. The milk is obtained from such dairies only as are under his inspection. Separate examinations are made of the different herds, so as to trace disease to its proper source. The collected milk is filtered each day through immense sieves of gravel, which have first been subjected to a high degree of heat in order to sterilise them. The milk is forced through from below upwards, and collected in proper vessels. Four thousand quarts pass through such a filter in one hour. By this means the dirt is removed and with it about 50 per cent. of the bacteria present.

While this filtered milk keeps longer than the unfiltered, and is more readily sterilised, it is just as dangerous if disease germs were originally present, since, as was stated above, in connection with the filtration of water, the disease germs are just as likely to be among the 50 per cent. that pass through as to be among those that remain.

In order to render milk completely sterile, it must be subjected to such a degree of heat as will coagulate the casein and make the product undesirable in other ways. If, however, great care be exercised in the milking, and sterilisation be carried on at once or shortly after, a very moderate degree of heat will be sufficient to make the milk entirely sterile.

One of the bacteria that is often found in milk has very resistant spores, and, therefore, if milk becomes contaminated by exposure to the dust and dirt of the air or stall, ordinary warming or heating, as is done when milk is Pasteurised (so-called sterilised milk), will not suffice to destroy these spores.

Milk is often sold to us in bottles, and one would imagine that such a product was reasonably clean; but this bottling is done in a very careless way, often in the street by some ignorant delivery boy, while the street sweeper is raising clouds of dust, some of which lodges in the exposed milk.

In one dairy in Dresden, Germany, all the milk comes from stall fed, or dry-fed cows, experience having shown that such cows give a product that is less variable, and contains fewer germs, and sours less speedily than when they are fed on fresh grass. Great care is taken in the milking, and especial attention is paid to the cleanliness of the employees. After the milking, the milk is placed in coolers, where it remains two hours, at a temperature of 10 degrees C. Then it is put into a centrifuge, in order to separate the dirt that might accidentally have fallen in. It is now warmed up to 65 degrees C. (Pasteurised), and collected in half-pint sterilised bottles, and the filled bottles again heated for one hour and three-quarters, at 65 degrees C., and quickly cooled. Such milk is reasonably sterile, and the method is the only one to be recommended.

Unless all these steps are followed the milk cannot be considered sterile.

What danger is there in milk from tuberculous cows? This is a question which, just at present, is receiving considerable attention.

Tuberculosis is very frequent among cattle. In the slaughter-houses of Berlin, out of 142,000 head of cattle 21,000, or 15 per cent., were found to be tubercular. In all Prussia 10 per cent. of all the cattle slaughtered annually are found to be affected with this disease. Some veterinarians claim that 30 per cent. of all cows are infected, and that a herd cannot be found entirely free from the disease. From this one can readily see the importance of this question. In New York city 900,000 quarts of milk are consumed daily. Consumption is likewise a very common disease, causing from one-third to one-fourth of all the deaths among adults, and many, if not the greater number, of the diseases of children are tubercular in origin.

Is the cow an enemy to man? Are we warranted in accusing the milk of consumptive cows as being the cause of consumption in man. The last word has not yet been said on this subject. We can only give the opinions of authorities, the present beliefs gained from the knowledge at hand; and these are that, if the udders of a cow are unaffected, if there is no local tuberculosis, no bacilli are to be found in the milk, the milk may be considered safe. Yet,

later investigations have shown that the toxic principles of bacteria find their way into the milk, that the milk of an animal rendered immune to diphtheria or tetanus has the same properties as the serum of the blood, and can protect other animals. If this is uncontroverted, then the milk of tuberculous or consumptive cows may have within it the products of the tubercle bacilli, and such milk may have the same effect upon the human organism as these products obtained artificially, or from cultures outside of the body. The discussion on the benefits or ill effects of tuberculin has not yet been closed, and it is impossible to say, therefore, whether such milk, *i.e.*, milk containing tuberculin, is positively harmless or dangerous.

In Paris all cows, whose milk is offered for sale, must be tested with tuberculin to prove their freedom from tuberculosis. Our own Board of Health has strongly advocated a similar test.

Tuberculin has been found reliable in the greater number of cases, *i.e.*, if an animal showed signs of temperature rise after the injection of the tuberculin, the disease has always been found present; but the disease has been found when no rise has occurred, so that it is a positive test only. Tuberculosis is present whenever there is a rise of temperature, but it is not necessarily absent if no reaction occurs.

Because tuberculosis is so very frequent, because 2,700 deaths of adults between 15 and 45 occur every year in this city alone from this one disease, it behoves us to try every measure that holds out the slightest chance of success in reducing this awful mortality, and, therefore, if only as an experiment, it would be worth the time and money to destroy every suspicious animal, and thus prevent the sale of all milk save that obtained from perfectly sound cows. Any reduction in the death rate from this disease will be a step in advance, and our efforts should be directed to this end at all cost.

If the milk of consumptive cows is dangerous, then cheese and butter made from such milk is likewise dangerous, and the sale of such should be equally guarded against.

In Germany, butter has been made from sterilized milk by the addition of pure cultures of certain bacteria, which have the power of coagulating the milk. Such butter has a constant flavour, and does not deteriorate so quickly as butter produced in the ordinary way.

To summarise in regard to milk, we can say that (1) a careful inspection of the dairy; (2), a close examination of the cattle; and (3), cleanliness in the transportation and sale, must be rigorously enforced to safeguard the public health.

As regards meats, little has been said or done. Meat is rarely used in the raw state, and cooking generally renders ineffective the germs likely to be found present.

In the cities of Europe, careful inspection is practised at the abattoirs, and meat from diseased cattle is excluded or sold under restrictions. Meat shops are likewise kept very clean, and the meat is seldom exposed in filthy warehouses. In our own cities some of the meat offered for sale on the stands and in street shops is most unfit for food—some of it, indeed, in a state of putrefaction. Some cities have laws which make such meat liable to seizure, but these laws are seldom operative.

The advances in fermentation deserve attention, for, though they are not, strictly speaking, connected with our subject, yet so closely are the yeasts related to bacteria, and so similar are the methods of cultivation, that any discoveries in the one field are sure to be of value in the other. Bacteria have always been a disturbing element in industrial fermentations, and expensive methods have been resorted to, to prevent the entrance of disease germs—disease, here, meaning impure or improper germs.

The yeasts were formerly considered as few in number—as alcohol producers and non-alcohol producers—no serious efforts were made to obtain pure cultures, but the mashes and brews were kept under such conditions that the foreign germs were prevented from growing or multiplying. Beer was stored in ice-cellars, whisky was subjected to special temperatures, and other elaborate measures were used which now can be dispensed with if we start with pure cultures of yeasts at the beginning, and avoid the entrance of impurities from air, water, etc.

In Denmark, Hansen (and from him a school has originated) pays great attention to the cultivation of pure yeasts. Brewers can obtain from the laboratories such pure cultures and thereby insure a definite alcoholic strength, a constant flavour, and a product that will not deteriorate, even under varying conditions of temperature, etc.

By experimenting with different combinations of yeasts, various degrees of bitterness and different aromas can be

developed. Wines depend very largely for their bouquet, not so much upon the grape as upon the particular germ or germs used in the fermentation of the juice. Experimenters have obtained, with the same kind of grape, a half-dozen different wines by using as many different yeasts. As the pigment yeasts produce various colours, so the yeasts used in fermentation give rise to various ethers, and these ethers give the wine its peculiar bouquet.

We should expect to obtain a Rhine wine from a New Jersey grape by using the yeasts which are common in the Rhine region, or on the Rhine grape. Even out of apple must, a good-tasting wine has been produced by the use of particular cultures of yeast.

These researches have revolutionised German brewing, and the large breweries now have competent bacteriologists in their employ, who attend to the cultivation of their yeasts.

The spaces or holes peculiar to certain cheeses are due to the evolution of gases during the ripening process. These gases are produced by certain bacteria, and by using pure cultures of these gas-forming bacteria in the manufacture of cheese, these air-spaces will always occur. The odour of cheese is likewise due to bacteria, and special flavours can thus be obtained at will by using the particular germs.

Bread made from pure yeast will be found to be more digestible, to be lighter, and to possess a sweeter flavour. Too little attention has been paid to this in baking. Mixtures of yeast and bacteria are used, and the baking powder or the flour is blamed for poor results. Sour bread is usually due to a poor quality or impure kind of yeast. The soil out of which we obtain such important food-stuffs has been studied bacterially, and has been found to contain peculiar germs, which are all necessary to the growth of the plant. These are the so-called nitrogen-forming bacteria.

They convert the nitrates into nitrites, the oxidizers of organic material, more necessary to the well-being of vegetable life than anything else. Instead of using tons of fertilisers, the agriculturist of the future will cover his fields with cultures of the nitrogen germs and obtain better results. We will even have special germs for special plants. The science of agriculture is yet in its infancy, if we may believe the promises held out to it by bacteriology. Even at present the agricultural colleges are equipping themselves with laboratories for bacteriological research.

Thus I have tried to show that the recent advances in this science are as nothing compared with what may yet be expected; that in these germs, microbes and bacteria, mankind has deadly foes and also important friends; that we must do all we can to rid ourselves of the former, and make the latter our willing slaves.

DISEASED MEAT.

At Reading, on January 31, Alex. Howland, of 95, Great Knollys-street, butcher, was summoned at the instance of the Corporation for exposing diseased meat for sale in the open market on January 18.—Mr. Millington (Deputy Town Clerk) said the Corporation were extremely anxious to stop the sale of this improper and unwholesome meat in Reading, and it was not altogether an easy matter to do it. The Corporation trusted that they would be supported by the Bench in these prosecutions.—Wm. Henry Robertson, Inspector of Nuisances, said that on Saturday, January 18, he went to the open market, about one o'clock. He visited the defendant's stall, on which was a quantity of beef, which appeared to be very poor. It was of a very dark colour, and there was almost an entire absence of fat. The defendant's man was offering some of it for sale. Witness came to the conclusion that it was not fit for sale, and went and fetched Dr. Ashby and a magistrate. Witness drew the magistrate's attention to the meat and he condemned it, and ordered it to be so dealt with as to prevent it being sold. Witness took it to the Corporation yard, where he had it weighed. There were twenty-seven pieces of meat, and a quantity of scraps, and the weight was 147 lbs. After it was weighed it was put into one of the Corporation carts and disinfectants applied.—Cross-examined: He could not say that he had ever seen any meat on defendant's stall before which he could complain of.—Dr. Ashby, Medical Officer of Health, said he examined the meat on the defendant's stall, and was of opinion that the meat was unfit for food. It was very emaciated, had very little fat on it, and was of a dark or mahogany colour, which indicated, he believed, an interference with the due oxidation of the blood of the animal, associated with retention of deleterious matter in the blood and tissues. He was sure it was not the meat of a healthy animal, but he believed it was that of an animal which had suffered from some wasting disease.—The defendant said he sent the meat to the market in good faith, thinking it was good and wholesome. If he had not thought so, he should not have sent it there the first thing in the morning. He had the bullock on the Friday morning, and killed it on the Friday afternoon. The inspector did

not leave him a single piece of meat, so that he could not have it examined, or he might have presented a better defence.—The Chairman said the defendant had practically presented no defence at all, and, therefore, they had not the slightest hesitation in finding him guilty. They felt very strongly about this. If he had wanted to put before them a case that would lead them to come to a different conclusion he should have brought the man there of whom he bought the animal, or if he had shown that he gave the full price for the bullock that would have caused them to look leniently at the matter. There was no excuse for him. This was a very valuable and important law, because the health of the people might be very considerably injured by improper food being sold. He should like to impress upon the defendant that he was liable to a fine of £20 for each of these pieces of meat, or a penalty of over £500, and if it was a bad case the Bench could commit him to prison for three months without the option of a fine. But, as the Bench thought it was very possibly carelessness rather than criminal knowledge that he was guilty of, they thought the justice of the case would be met by a fine of £5 and 19s. 6d. costs, or one month's hard labour in default. A week was allowed for payment.

JOHN HARRINGTON, meat salesman, of Charterhouse-street, Smithfield, London, was summoned on January 31st, at Worship-street, for having, in November, 1895, sold to Frederick John Robinson, of St. Stephen's-road, Bow, the carcase of a cow, "intended for the food of man, which carcase was unsound, unwholesome, and unfit for human food."—Mr. Muir, who prosecuted, said that in December last the Mr. Robinson mentioned, who carried on business as a maker of sausages and spiced meats, was prosecuted by the sanitary authority of Poplar, for having on his premises, and in course of preparation for food, the carcase of a cow, which was seized and condemned as unwholesome, a fine of £50 being inflicted. Harrington, the present defendant, was alleged to have sold the meat to Robinson.—Inquiries made at Glastonbury, Somerset, showed that the animal belonged to a farmer there, who would be called, and who would say it got its leg broken, and as it pined away he had the animal shot. It was then sold to a knacker, and the chain of evidence would show that from an assistant in the knacker's yard a telegram was sent to the defendant, asking if he could do anything with a case of beef, and the reply received was, "Yes, send it on at once." It was sent, packed in two hampers, and was labelled "Cats' meat," and it would be proved that that was the carcase sold to Robinson.—The case was adjourned for a fortnight, defendant being allowed bail in £50.

SPIRITS.

At Eastbourne on Feb. 3, George Luck, Ship Hotel, Meads, was summoned for selling whisky adulterated with water. The Town Clerk (Mr. H. W. Fovargue) appeared in support of the summons, and Mr. C. G. Champion for the defence. The case had been adjourned on the application of Mr. Champion, who asked to have the third sample taken by the inspector analysed at Somerset House.—The Town Clerk said that this had been done and the certificate stated that the whisky was 33.8-10 under proof. The analysis of the public analyst, mentioned at the last hearing, was 29 degrees under proof, so that the Somerset House analysis was still more unfavourable to the defendant. Mr. Champion pointed out that the sample of brandy taken at the same time as the whisky was found genuine, and argued that possibly the heat of the atmosphere in which the whisky was kept had caused the alcohol to evaporate. The Chairman thought the effect of the heat would be to benefit defendant. Mr. Champion said he had it from practical men in the trade that it would affect the whisky in a way adverse to his client. Mr. Champion also argued that salt in the water might extract a great deal of the goodness of the alcohol.—The Chairman said that the case was proved up to the hilt, and defendant would be fined £2 2s., including costs.

At Galbally, Limerick, on the 29th of January, Andrew Casey, publican, was summoned by Sergeant R. P. Kennedy, Inspector of Food and Drugs, for having sold adulterated whisky. The sergeant purchased from the defendant seven glasses of whisky for analysis, and Sir Charles A. Cameron reported that the whisky was 32 degrees under proof, and therefore an adulterated article.—The defendant said he only put water in the whisky in the proportion of one gallon of water to every three of whisky.—The magistrates fined the defendant £1 and costs, 3s. 11d., and should he ever be brought up again the conviction would be endorsed on his license, as he had been already fined £1 and costs for a similar offence on the 29th August, 1894.

At Southam, John Adams, landlord of the Horse and Jockey, Southam, was summoned for selling rum not of the nature, substance, and quality demanded by the purchaser, Mr. G. H. Salmon (Inspector under the Food and Drugs Act).—Defendant said he retailed the rum in the same condition as that in which he bought it.—The Bench fined defendant £1, including costs, which he paid.

JEREMIAH MITCHELL, landlord of the New Inn, Gildersome, was fined 20s. at Leeds West Riding Court on January 28, for having sold Irish whisky containing 21 per cent. of water in excess of the quantity allowed by the Act.

At Damfermline, on January 27, Michael Purcell, vintner, The Auld House, Kirkgate, was convicted of having sold whisky which was more than 25 per cent. under proof. On behalf of accused it

was stated he had broken his tester, and in the hurry during the New Year holidays had put in more water than was allowed by the statute. The prosecutor stated that the whisky was 34°39 under proof. Bailie Scobie passed sentence of a fine of £1, or ten days in gaol.

MILK.

At Kensington, on January 28, Charles Harrison, 8, Waldo-road, College Park, was summoned at the instance of the Hammersmith Vestry for selling an article, to wit, milk, which was not of the nature and substance demanded.—Mr. W. P. Cockburn appeared on behalf of the vestry.—The defendant, who said he did not pretend to sell pure milk but “separated” milk only, was fined 10s. and costs.

Mr. J. W. STEPHENS, on behalf of Mr. Chambers Leete, clerk to the Kensington Vestry, applied for a distress warrant against Herbert Randall, of Bolton-road, Notting-hill, who was fined 40s. at the last sitting of the magistrates.—Arthur Ellenden, an inspector under the Sale of Food and Drugs Act, proved serving the order of the court on the defendant's wife. He also added that Randall had previously given the vestry a good deal of trouble.—The bench granted the warrant of distress, and failing to pay, the defendant to be imprisoned for 21 days.

At Dublin, on January 31, Bernard Murphy, No. 8, Pimlico, was fined £3 for selling new milk from which 40 per cent. of fats had been abstracted.—James Lennon, 64, Lower Clanbrassil-street, was, for refusing to sell a sample of new milk for analysis, fined £1.

At Neath, on February 3, John Jacobs was charged with supplying milk adulterated with 19 per cent. of water to the Neath Workhouse. Mr. Edward Powell appeared to prosecute, and Mr. H. P. Charles defended. An objection that the samples for analysis were improperly taken was held to be legally good by the Bench, who dismissed the case.

At Belfast, on January 28, David M'Master, inspector of food, drugs, etc., summoned Henry Connall, spirit grocer, 42, Byron-street, for selling adulterated sweet milk on 6th inst. Mr. D. F. Spiller prosecuted. The defendant stated that he had sold the milk as he had got it, and did not know that it was adulterated. A fine of 10s. and costs was imposed.

BUTTER.

At Liverpool, on January 29, Robert Mullock, grocer, of County-road, was summoned for having, on the 16th ult., exhibited for sale on his counter a quantity of margarine without having a label attached thereto.—Mullock summoned his assistant, named Nicklin, and it was proved that he was at fault in not having replaced the label on the margarine.—The case against Mullock was thereupon dismissed, and Nicklin was fined 20s. and costs.

At Birmingham, on January 31, Clifford Williams, 137, Gooch-street, was summoned for selling butter which contained 75 per cent. of foreign fat. John Henry Thomas, an inspector in the employ of the Corporation, went to defendant's shop and asked the price of butter. Defendant replied 1s. 2d., and witness then asked if he had any at a cheaper price. Defendant said he had “some lovely butter” at a shilling per pound. Witness purchased a pound of the article, and on analysis it was found to contain 75 per cent. of foreign fat. A fine of 40s. and costs was imposed.

At Fakenham, on January 27, Charles G. Corke, Fakenham, grocer, was charged with selling tub butter not in accordance with Section 6 of the Food and Drugs Act, 1875. Mr. Butcher defended. The analysis of the butter was given as 75 per cent. good butter and 25 per cent. foreign fats, and the defence was that the butter was bought as pure butter from Mr. L. Flood, of Cavan. Mr. Butcher made an energetic defence, but the magistrates decided to convict, and fined defendant £2 and 9s. 6d. costs.

BEESEX.

At Pembury, on January 31, Albert Chapman, grocer, was summoned at the instance of the Kent County Police for selling beeswax said to be adulterated with 50 per cent. of paraffin at his shop at Pembury.—Fined 1s. and 10s. costs.

A MEDICAL MAN ON COPPER IN PEAS.

THERE are various ways of securing a puff, and the following letter, which appeared in the *Grocer* of Feb. 1, purporting to emanate from Thos. Whiteside Hime, B.A., M.D., etc., formerly Medical Officer of Health for Sheffield, and for Bradford; Fellow of the Sanitary Institute, etc., is not entirely devoid of interest. Mr. Hime is alleged to say:—

“May I ask you to be good enough to correct the spelling of my

name in your report of my evidence in the coppered-pea case—Grist v. Sumners—in your last issue? My name is Hime, not Him.

“With regard to the report itself, no doubt the exigencies of space made it impossible to mention many points which I stated in evidence. With regard to the ridiculous suggestion of the prosecution, that these deadly peas (which never injured anyone whose existence is known!) are labelled in France ‘à l' Anglaise,’ in order to warn Frenchmen not to eat them, is it not sufficient refutation to say that the very peas which are the subject of this prosecution are not so labelled! They are French peas, purchased in London, and should have the warning notice, ‘à l' Anglaise’ on the bottle; but they have not. The great points to bear in mind, in judging of the unreasonableness of these persecutions (not prosecutions) as to coppered peas, are—

“(1.) There is not a particle of sulphate of copper in coppered peas. That salt is added to the peas in preparation, but it then ceases to be sulphate, and enters into an insoluble combination with the peas. This combination is almost entirely discharged from the body after it has been eaten, as I have proved by experiment again and again. Copper cannot, therefore, accumulate in the body.

“(2.) Sulphate of copper, which is a soluble salt, may be taken in a pure state in quantities ten, twenty, or even thirty times larger than it is ever taken with peas, and without doing the slightest harm. Nay, it was formerly employed by doctors in these larger doses, and patients continued to take these large doses for months and years with benefit, and without one trace of copper poisoning. If it has ceased to be used in the same way, it is owing to the introduction of newer and, some think, more efficacious remedies.

“No one has ever yet been able to produce a person suffering from copper poisoning, or other injurious effects of eating coppered peas. Surely this fact alone should suffice to cause every one of these prosecutions to be dismissed. The coppered peas are eaten by tons, yet no case of injury can be produced. On board ship, and in India and our tropical colonies, where fresh, green vegetables are rare, these coppered vegetables are eaten frequently, not as among us, yet there no more harm is caused than here.

“It is greatly to be regretted that there is such timidity about resisting these prosecutions and defending the actions. If done intelligently they must end in success—as in several cases I have been engaged in—and in a speedy cessation of proceedings by baffled authorities. Such has largely been the case with regard to certain meat prosecutions, in which the authorities declared there ‘must’ be danger, though they could never produce any person who showed the truth of their allegation. If grocers would combine and defend the next half-dozen pea cases, I feel confident that there would not be another for half a dozen years.”

We believe the Medical Council holds strong opinions upon the question of medical advertising. If it does, the concluding paragraph in the above is worth its attention, as is also a recent puff of Mr. Ernest Hart.

CORRESPONDENCE.

To the Editor of FOOD AND SANITATION.

THE USE OF BORIC ACID AS A PRESERVATIVE.

SIR,—The possibilities of mischief ensuing upon the use of boric acid as a preservative of milk and other articles of food seem not to have received the attention they deserve. Since 1891, when the Kensington Vestry sought the advice of Sir A. Clark, Sir Henry Thompson, and Dr. Lauder Brunton, on the subject, no further step appears to have been taken. The opinions of those eminent men were cautiously expressed, *vide Pharm. Journ.* [3], vol. xxi., p. 865, but they concurred in pronouncing the use of boric acid in large doses, or over prolonged periods, to be dangerous to health.

During the exceptionally hot weather which prevailed last September some milk was delivered to a household here, which is believed to have had boric acid added to it by the dairyman. In ignorance of this the cook used “glacéline” to preserve it, and ultimately it was made into blanc-mange.

The ladies to whom this was served up were attacked with vomiting and other symptoms of gastric irritation, and were for several days seriously ill. The remainder of the blanc-mange was given to the fowls, with the result that six out of the nine died, apparently from exhaustion, being unable to take food. An examination of the stomachs made by the medical officer of health, Dr. M. K. Robinson, revealed organic lesions, penetrating below the inner surface of the stomach, and apparently caused by an irritant poison.

If this was really caused by boric acid, such a result is strangely at variance with the generally accepted belief that it can be safely applied, not only as a dusting powder to the tender skin of an infant, but also to the eye, to mucous membranes generally, and even to open wounds.

Dr. Robinson referred to the experience gained in a public institution by using boric acid as a remedy for epilepsy in lieu of bromide of potassium; which pointed to the risk of serious injury to the kidneys, as well as to the stomach.

This should put the chemist on his guard against the possible evil effects of this preservative when used both by the dairyman and the consumer; although unfortunately it is more than probable that he will lack the opportunity of exercising his vigilance.

In the case I have described, the customer obtained the "glacialine" from the grocer; and too often the curious perversity of the public in seeking their supplies of drugs and chemicals from those who are necessarily ignorant of their properties, deprives them of a valuable safeguard. I may add that "glacialine" responds to the tests for boric acid.

Dover, January 27, 1896.

J. F. BROWN.

ANSWERS TO CORRESPONDENTS.

SELF-RAISING FLOUR.

F. E. GADD.—The substances sold under the name "Self-Raising Flour" are merely flour mixed with the ordinary baking powders, only it is not necessary to use starch; for the baking powder merely use the bicarbonate of soda and an acid. You can easily arrive at the exact quantity required by trying any of the formulas, using about an ounce of baking powder per 6 lbs. of flour, or *pro rata*. Two or three experiments will enable you to judge the exact amount required of any powder. But do not use alum for a self-raising flour, as although alum in baking powder is not held as adulteration, yet alum in bread is an offence against the law. A very important thing is the mixing, which must be well done.

NEW BOOKS.

"ECONOMICAL HOUSES" by Henry Goldsmith, architect. Publishers, George Faulkner and Sons, Manchester.

Mr. Goldsmith's object in compiling this work was to prove that houses could not only be built cheaply, but possess artistic feeling and outline, and give their occupants good rooms, full of sunlight, and cheerful to inhabit. The work contains plans and admirable illustrations of nearly seventy houses, etc., with particulars as to the cost of each. The drawings are not mere architectural imaginings, they are existing residences, and for those contemplating building, the work should prove very helpful and valuable. The book is exceptionally well got up, but excellent workmanship has characterised all that we have seen of Messrs. Faulkner's publications.

LARD ANALYSIS TROUBLES.

THIS difficult subject is the cause of a few remarks in our contemporary the *National Provisioner*, which says:—

"While it is true that the reduction of a silver solution is one of the best means of recognising the presence of cotton oil, it must be borne in mind that it is far from being infallible. Old oils will sometimes not respond to the test, while old lards very frequently yield a very marked reduction. The reducing properties seem to be inherent to the oil, for carefully prepared cotton oil stearine, melting at 75 degrees to 80 degrees F., will show none, or but a very faint reduction, while the winter oil pressed from it reduces silver very heavily. This goes to prove that with but this one reaction in hand, all calculations based thereon are entirely erroneous. A careful examination of lard requires the determination of various other chemical and physical properties and reactions; only from the logical combination of the results thereof a reliable decision may be arrived at.

"We have in a previous issue already brought an article about the influence that the food itself will exercise on the chemical composition of the lard produced. Hogs or cattle fed on cottonseed meal will yield lard that presents some of the characteristics of cottonseed oil. It is a well-known fact that the meat of geese or ducks which had been allowed to graze off a field previously sown in rape seed becomes perfectly unfit for human food. In Europe ducks are often allowed to feed on a species of sweet water clam in some regions. The meat thus produced has an unbearable, rank taste. Swine fattened on beechnuts produces a lard of a peculiarly disagreeable flavour. In this country we are fortunately more fastidious and more careful about feeding the animals to serve for our food, and do not allow them to seek their own food. But it is not only oleaginous foods that impart a disagreeable taste to the meat and fat produced. Venison, especially partridge, assumes a greasy taste in January and February, when the bird is obliged to seek its food under the snow, and though it feeds but on grass and winter seeds, a very decided greasy taste is produced in the meat."

MICROBES AND STERILISED FOOD.

MICROBES as a class have been so roundly abused that the discovery of the fact that we cannot altogether get along without them induces a certain sense of satisfaction. A Russian professor has been taking great trouble to determine the value of germs in assisting the body to perform its natural functions. He fed animals on food that had been carefully sterilized, and compelled them to breath germless air. The experiment proved that the presence of microbes

is necessary to digestion. The animals soon showed the effect of the deprivation. First they began to droop, then lost their appetite, and finally weakened and died. It was found that the food simply would not assimilate when the microbes were absent. This series of experiments has been extended to the vegetable world. It is now proved that certain plants can only assimilate the nitrogen which is necessary to their growth through the action of the microbes that live at their roots.—*American Practitioner and News*.

WHITECHAPEL AND ADULTERATION.

MR. W. C. YOUNG, the Board's analyst, presented his report for the past quarter, which showed that the whole of the samples submitted for analysis were genuine and of good quality, with the exception of two samples of milk, which were adulterated with 6 per cent. and 9 per cent. of water respectively, and two samples of butter, which were adulterated with 90 and 46 per cent. of foreign fat respectively. Proceedings have been taken in the two cases of adulterated butter, with the result that the vendor of the sample adulterated with 90 per cent. was ordered to pay 12s. 6d. costs, and the vendor of the sample adulterated to the extent of 46 per cent. was ordered to pay 23s. costs. The vendors of the two adulterated samples of milk have been cautioned.

Mr. Young was re-appointed analyst for the ensuing year.

GREENOCK AND ADULTERATION.

MESSRS. M'COWAN AND BIGGART, public analysts, Greenock, state that of 111 samples analysed under the Food and Drugs Act during the past year, 15 samples, or 13.5 per cent., were adulterated. This percentage compares with 9.4 per cent. and 8.8 per cent. for the years 1894 and 1893 respectively. Nine prosecutions were instituted during the year, concerning 7 samples sweet milk, 1 sample skimmed milk, and one sample whisky—the total fines amounting to £22 15s.

A SENSIBLE STEP.

THE Islington Vestry have just caused two buildings to be erected in the parish in which to accommodate, free of charge, unfortunate families in which any dangerous infectious disease has appeared, who have been compelled to leave their dwellings for the purpose of enabling the sanitary authority to disinfect them. The buildings consist of several sets of rooms for the purposes of temporary shelter, and are admirably fitted with every convenience.

DOVER AND ADULTERATION.

THE Inspector in his report stated that he had during the last quarter obtained two samples of butter, and they were both pure.—Councillor G. H. Mowll said he could not understand how it was that the Analyst had reported "nil" when he had had two samples sent to him.—The Town Clerk said he had written to the Analyst on the subject.—Councillor G. H. Mowll said that they should not give their officer a free hand to take as many samples as he liked, or he might take 40 samples and they would be charged 10s. 6d. each for the analysis. In some places they allowed two samples for each 1,000 inhabitants. He thought that there should be some limit. He should like to see the law carried out, but there should be some limit to expenditure. He believed that there was a bill for £12 for analysis, and yet there was a "nil" report.—The Town Clerk said that there was no £12 this quarter. There was a small bill, and he had written to the Analyst asking why he had sent a "nil" report when he had also sent in a bill for the analysis of two samples.

CLERKENWELL AND ADULTERATION.

MR. W. R. PUTTERILL (Chairman of the Public Health Committee) brought up a report on a reference to them as to the desirability of taking an additional number of samples of articles of food for submission to analysis, and, further, to further remunerate the analyst for such additional work. They consequently recommended that the third inspector be instructed to obtain 100 samples per annum, which would make a total of 300 samples per annum. With regard to the remuneration of the analyst, his present salary of £100 is based upon an average number of 200 analyses per annum; and that the committee think that the further remuneration should be upon the same basis. The vestry was, however, aware that accommodation for the analyst has been provided in the Town Hall, and the committee thought that occupation of the rooms should be given in part-payment of the additional salary. They therefore recommended that the salary of the analyst be increased to £125, and that he be allowed to occupy the room provided in the Town Hall as a laboratory during his tenure of the appointment, he paying for the gas used therein.

Mr. Walton seconded, and it was adopted.

BERMONDSEY AND ADULTERATION.

THE Sanitary and Public Health Committee reported that 10 articles of food and drugs had been purchased and submitted to the public analyst, of which nine were found to be genuine. Proceedings were being taken against the vendor of the adulterated article.

A cheque was drawn in favour of Mr. Bodmer, the analyst, for £41 2s.

GLAPHAM AND ADULTERATION.

It was reported by the inspector under the Sale of Food and Drugs Act that 11 samples of milk and butter had been analysed, all of which were proved to be genuine—a good testimony to the honesty of our shopkeepers.

THE MEASLES MICROBE.

THERE has been great anxiety among certain medical men to discover a microbe of measles. These gentlemen can now be satisfied, since it is announced in *Nature* that the desideratum has been attained by one Dr. Czajkowski, who is said to reside in the Lithuanian forests. If there has been a doubt before, the name of the discoverer ought to settle it.

HOMŒOPATHY EXTRAORDINARY.

A PARIS physician is said to have prescribed a nightly dose of infusion of fig leaves for a patient whose dreams were peopled by visions of naked women.

FAME.

THE shortest road to fame nowadays is to invent a new remedy, application, or bacillus.—*Journal of Arkansas State Medical Society*.

SPURIOUS COD-LIVER OIL.

SPURIOUS cod-liver oil has again made its appearance in the European markets (*Pharm. Weekblad*, Dec. 7, 1895). The article in question has a beautiful appearance and the odour of cod-liver oil, but consists largely of neutral oil (mineral) to which cod-liver oil is added. A similar adulteration of cod-liver oil was reported by Prof. J. B. Nagelvoort several years ago.

FIN-DE-SIECLE CHILDREN.

THE Medical Officer of Health to the Oundle Rural District Council, Northamptonshire, says: "At the request of the Chairman of the School Board, I visited the village of Nassington, on account of the number of children absent from school owing to a rash on their faces, arms and hands, supposed to be due to some infectious disease. After due examination I came to the conclusions (1) that the children were not suffering from any infectious disease, and that there was no reason why they should not attend school; and (2) that the rash was caused by the children rubbing their hands and arms with the juice of the plant called 'patty spurge.' I have no doubt that this was done to escape school. In all there were about twenty-five cases."

WOLVERHAMPTON AND ADULTERATION.

THE borough analyst of Wolverhampton, Mr. E. W. Jones, has just presented to the Town Council his report for the three months ending December 31, the result of his examination of the samples submitted to him under the Food and Drugs Act. The report is by no means satisfactory. Out of some 64 samples of food, drugs, milk, and spirituous liquors submitted for analysis, Mr. Jones found 16, or one-fourth of the whole, adulterated, and some of them to a considerable extent. Butter and milk appear to be the articles in which adulteration is more largely practised than any other. A mixture of margarine and butter, sold as genuine butter, is a common species of fraud, and although it has received some check by the recent infliction of heavy penalties upon offenders brought before the magistrates, the dishonest practice is still carried on to a large extent in the borough. There are, no doubt, considerable difficulties in the way of dealing thoroughly with this evil. In Wolverhampton, for example, there are, at least, 1,300 tradesmen's shops where goods are sold which come under the provisions of the Adulteration Acts. The adoption of the Acts is to a large extent optional, and where they are enforced the instructions of the Local Government Board are to the effect that in taking samples of the various articles for analysis the inspector should act upon the principle of taking one sample to each thousand of the population. This would give to Wolverhampton, with its 86,000 residents, 86 samples per year to be tested, and leave an enormous opportunity for adulteration to be carried on by tradesmen whose dealings did not happen to be included in the restricted official area of supervision. Then in the smaller towns of the Black Country the adoption of this permissive Act of the Legislature is rather the exception than the rule, with the result that thousands of poor people are unwittingly buying and eating unwholesome food, although they pay the price of a genuine article. This is truly a very unsatisfactory state of affairs, and if local authorities do not put into action the provisions of the law as it now exists, it should certainly be made not a matter of option but a matter of compulsion to the guardians of the public health to adopt the Act, and, so far as they can, safeguard the poor from the pernicious sale of adulterated food.

CONSTRUCTION OF THE WELSBACH GAS BURNER.

THE chemicals constituting the incandescent mantle of the Welsbach gas burner are principally the oxides of

cerium, lanthanum and thorium, says the *Pharmaceutical Era*. Last year a Western contemporary published an article upon this subject, from which we take the following:—

"All artificial light depends upon solids (mostly carbon) in a state of white heat. The idea ordinarily connected with white heat is that of high temperature, say 1,500 deg. C. As a matter of fact, however, white heat is that condition of a body in which it converts the absorbed heat into light of all degrees of refrangibility, in other words, when it produces a continuous spectrum. But this stage is reached at different temperatures for different substances, being so low for the so-called rare earths that they may be heated to whiteness in an ordinary Bunsen burner. For cerium oxide this fact was already known to Berzelius. Auer von Welsbach has sought to utilise this property of the rare earths in the construction of incandescent gas lights, to supply the more costly electric lights. But the original burners gave little satisfaction, owing to the indiscriminate utilisation of the minerals in question. Careful experiments conducted by McKean soon established the fact, however, that the light value of the different oxides is as follows (the unit of H. L., i.e., Hefner light, representing 0.86 normal candle power):—

Thorium oxide, bluish-white light ...	31.56 H.L.
Lanthanum oxide, pure white light ...	28.23 "
Yttrium oxide, yellowish white light ...	22.96 "
Cerium oxide, white light ...	15.36 "
Cerium oxide, reddish light ...	5.02 "
Didymium oxide, light emitted practically worthless.	

"The composition of the mantle of the Welsbach light burner is based on an intelligent study of the foregoing table, to combine the highest degree of luminosity with a combination of colours most agreeable to the eye and most nearly approaching sunlight.

"A difficult problem to overcome at the outset was the procuring of the material in greater quantities and at reasonable rates. Up to this period the sources of the rare earths were the Swedish thorite, which contained much cerium and didymium, but very little lanthanum; the gadolinites, with a large proportion of the useless and a very small proportion of the desirable elements; thorite and orangeite and monacite were found in sufficient quantities. The only remaining available mineral was the more common cerconite, but, as already remarked, this light was not entirely satisfactory. Then came the discovery of large deposits of monacite in Brazil, and later of practically inexhaustible deposits of the same formation in North Carolina. Monacite is tricerium phosphate, in which a considerable percentage of cerium is displaced by didymium, lanthanum and thorium. Its composition, according to Waldron Shapleigh, who has made the study of the rare earths his speciality, is as follows: Cerium oxide, 28.30; didymium oxide, 15.77; lanthanum oxide, 13.29; thorium oxide, 5.62; phosphoric acid, 26.03; titanate acid, 3.23; ferric oxide, 1.67; silicic acid, 1.42; other oxides, 4.19."

For the benefit of those of our readers not familiar with the construction of the Welsbach burner, it may be explained that it consists of a Bunsen burner, the flame of which is covered over with a cone-shaped mantle composed as already described. The mantle consisted of a woven fabric impregnated with the chemical compound. On lighting the first time the fibrous substance is consumed, leaving behind the somewhat fragile cone of the earths, which, heated to intense whiteness by the colourless gas flame underneath, shines with a brilliancy rivalling the arc light, while its colour so nearly approaches sunlight that shades and tints can be distinguished at night. It is claimed that a consumption of 3 cubic feet of gas per hour will yield a light of 60 candle power, as against 25 candle power light obtained from 5 cubic feet with ordinary tip burners. Natural and water gas are said to yield a trifle better results with these burners than ordinary coal gas.

SOMETHING NEW FOR THE MEAT TRADE.

If any reliance can be placed upon a Hamburg newspaper article, which is reproduced in a recent number of the *Apotheker Zeitung*, Professor Emmerich has invented a method for preserving slaughtered animals entire, with skin and hair, which is soon to be applied commercially by a company recently organised. The Professor is said to have succeeded in slaughtering and treating an ox, a sheep, and a pig by a simple process which preserves the animals entire and the edibility of the meat for months; moreover, the flesh is not brought in touch with chemicals. According to reports, several of the most distinguished professors

of the Munich University—among them the director of the Hygienic Institute—took part in a repast prepared from the flesh of a wether which, treated by the Professor's process, had hung for four months behind the oven of a heated room. All the feasters were surprised by the fresh appearance and taste of the mutton, and pronounced the new method to be the ideal mode of conserving meat.

This new method is destined to play an important rôle in the abattoirs and packing-houses of the future, and will doubtless bring about many changes in this field. Patents are said to have been secured in all lands.

CURRENTS PLUS THAMES WATER.

DR. SEDGWICK SAUNDERS, on the 25th ult., received a communication from the chairman of the London Dried Fruit Association, Eastcheap-chambers, E.C., stating that a large quantity of currants were to be offered by sale by public auction at an early date, and that the same were in a damaged condition. The currants were deposited at Fresh Wharf, Thames-street, the quantity being about 900 tons. Several samples were collected from bulk and submitted to him, which, upon careful examination, were found to be damp from recent immersion in Thames water (owing to an accident to the s.s.

Nellie from Greece), but sweet, and in his opinion required only proper drying to be quite fit for human food.

POTATO WINE.

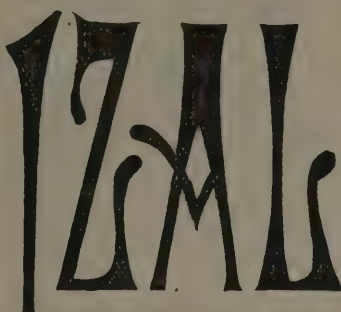
CONSIDERABLE surprise was manifested by a number of visitors to a recent agricultural exhibition in Paris on seeing certain bottles bearing the label of "potato wine." It is alleged, according to *l'Etoile Belge*, that in France 100 gallons of this wine can be produced for considerably under 20s.

We have received a copy of the first number of the new series of *The Photographic News*. This, the oldest established weekly photographic paper, has been reduced in price to one penny, and now caters solely for the requirements of amateurs. Among the articles which appear in the copy before us are "How to make Apparatus," "Snow Pictures," "Illumination of the Dark Room," "On Tour with a Camera," "Notes from the North," "From the Editor's Chair," "Our Consulting Room" and "Notes for Beginners." The special features aimed at in the journal in its new form are good paper and printing, plenty of illustrations, and instructive articles by practical writers. One novelty is a column of notes of interest to lady photographers. The paper is published at 22, Fumival-street, London, E.C.

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Food and Sanitation.

SATURDAY, FEBRUARY 15TH, 1896.

A POINT FOR CONSIDERATION.

It would appear from a letter which we publish in another column, sent to us by Mr. Keating Stock, that the point of our observations of a fortnight ago has been missed. It is somewhat surprising that we who,

when no journal would listen to the intolerable grievances suffered by public analysts from the Somerset House incapables, exposed that mischievous public department with a directness, pertinacity, and vigour foreign to the timorous cant that passes for journalism to-day, should be accused of severity and strictures on public analysts. We do not wish to dwell on the fact that we have done more in the true interests of public analysts during the past four years than they themselves did during their society's existence. The sudden jump of 10,000 samples was not due to public analysts or to Government departments, but to the editor of this journal, who, detesting cant, and caring not one straw for any of its professors, showed what the existing apathy caused this country to lose in money, in security from foreign foes, and in health. If the editor thought the public analysts generally were responsible for these wrongs to England, he is not the man to conceal his opinion. It is enough for the present to point to the fact that a careful study of the true inwardness of the situation may well give rise to grave doubts as to the benefits England has derived from its experience of analysts. There were analysts who advised the Government to abolish the Malt Tax, and in that question the bulk of the public analysts took no interest whatever. Others, distinguished men, are willing, like Pooh-Bah, for an "insult" big enough in money value, to swear that sugar, rice, and any foreign-grown substances a brewer cares to use, are perfection. English labour suffers and niggers benefit by this folly and mendacity. Other eminent analysts solemnly gave their *imprimatur* to potato spirit made in Germany, and swore it was purer than malt whisky. The distiller boycotts malt, and the German profits, English labour is displaced, land goes out of cultivation, and unemployed riots, starvation, and increased rates, with agriculture nigh ruined, follow this kind of work. Every thinking reader can trace out in many branches of business illustrations such as these, and as we are not the mouthpiece of public analysts, or any other class, but a journal devoted to what we believe to be England's true interests, as distinguished from political humbug or financial roguery, we believe in calling a spade a spade. We would rather be humble followers in the path of Swift, Cobbet and Junius, than Salisbury's latest literary curiosity, the Poet Laureate.

To our thinking, it is very like "tongue-i'-th'-cheek" upon the question of Somerset House, and its wrongs to England's industries when Mr. Keating Stock's (public analyst) friends are entertaining the head of the very department they so condemn, and lauding one whom, when it suits their individual grievances, they bitterly assail. We do not believe in "holding a candle to the devil." Nor can we regard with satisfaction expert-witnessing, such as that, for example, in the preserved peas case, nor such as was at the disposal of the water companies recently. A life per day is sacrificed to the American oil gang rascals because, for reasons best known to themselves, certain analytical gentry duped the Government into adopting a 73 degree flash point for mineral oils. It is a difficult point to determine where the nation benefits by all this. We have a very high regard for many public analysts, but we only do a duty in pointing out there are many gross abuses concerned with analysis, and that traders have some very weighty grounds for complaint.

MILK ADULTERATION.

IMPORTANT POINT.

In the Appeal Court, on Feb. 10, before Lords Justice Lindley and Kay, sitting as a Divisional Court to hear Crown cases, an appeal was heard in the case of *Hewitt v. Taylor*, against the decision of the magistrates sitting at Mossley, in Lancashire, dismissing a summons against Taylor, under section 6 of the Food and Drugs Act, 1875, for selling milk "not of the substance and quality demanded." The certificate of the analyst stated that the milk contained six parts of added water to every 100 parts of the poorest milk. At the hearing of the summons the respondent stated that he had milked the cow from which the milk came himself, and that no other person had had possession of the milk until the sale, and he attributed the pooriness of the quality to the cow having only just calved. The magistrates dismissed the summons. It was now sought to show on behalf of the appellant that the magistrates were wrong in dismissing the summons, on the ground that there was no evidence contradicting the certificate, and that the certificate was therefore conclusive. Section 21 provides as follows:—"At the hearing of the information in such proceeding the production of the certificate of the analyst shall be sufficient evidence of the facts therein stated, unless the defendant shall require that the analyst shall be called as a witness, . . . and the defendant may, if he think fit, tender himself and his wife to be examined on his behalf, and he or she shall, if he so desire, be examined accordingly."

Mr. Clay appeared for the appellant, and Mr. F. Newbolt for the respondent.

The court dismissed the appeal. They said that the section did not mean that the evidence of the certificate was to be conclusive, but only that it would be sufficient. But evidence might be called to contradict it, which might be weighed against the evidence of the certificate. The question was therefore a question of fact. Further, the certificate was disputed by the respondent, not on a question of fact, but on the subject of the analyst's opinion that the water he found in the milk was "added water."

A £5 PENALTY FOR A THIRD OFFENCE.

MR. D. W. MORGAN, of 15, Bedfordbury, appeared at Great Marlborough-street Police-court, on Thursday, February 6th, to answer a summons taken out by Mr. T. F. Strutt, sanitary inspector for the Strand division, for having sold milk adulterated with 12 per cent. of added water. This being the third offence, Mr. Newton imposed a penalty of £5, or in default one month's imprisonment.

At North London Police-court, on February 10, the Middlesex County Council had two prosecutions against milk dealers for alleged adulteration. The first defendant was Charles Rose, of Tassil's-terrace, South Tottenham, who sold milk in the Seven Sisters'-road, to Inspector Bridge, adulterated (as his certificate said) with 6 per cent. of added water. The defendant, however, said he had his portion of the sample analysed, and the certificate was not less than 4 per cent. of added water. He declared that he sold his milk as he received it from the wholesale man; but he had no written warranty as to its purity. Mr. Fenwick elicited that the defendant sold his milk chiefly amongst the poorer class, and fined him £3 and 12s. 6d. costs.—The next defendant was John William James, of West Green-road, Tottenham, whose milk was certified to contain 10 per cent. of added water. He also declared that he sold the milk as he received it, and pleaded that he was only a new beginner. Mr. Fenwick fined this defendant £2, and 12s. 6d. costs.

SPIRITS.

At the Keighley West Riding Police-court, on Feb. 7, before Mr. John Clough (presiding), and Mr. W.

Weatherhead, Jonas Crossley, landlord of the Grapes Inn, was summoned for selling adulterated gin, Irish whisky, and rum, and John Shuttleworth, landlord of the Black Horse Hotel, was summoned for selling adulterated Scotch and Irish whisky.—Mr. A. Randerson, district inspector under the Food and Drugs Act, proved purchasing a half-pint of each of the spirits mentioned on the 4th ult. He submitted a third part of each for analysis, and the analyst's certificate was as follows in Crossley's case:—Gin 45 degrees under proof; excess of water, 15.3 per cent.; Irish whisky, 26.3 degrees under proof; excess of water, 1.5 per cent.; rum, 27.3 degrees under proof; excess of water, 3 per cent. In Shuttleworth's case the report was:—Scotch whisky, 28.6 degrees under proof; excess of water, 4.8 per cent.; Irish whisky, 33.7 degrees under proof; excess of water, 11.5 per cent. Mr. Percy Naylor represented both defendants. In regard to Crossley, he said that the landlord on getting his whisky and rum from bond put them into very large casks, and in the transference a little evaporation had taken place. The gin was the worst case, being 10 degrees wrong. Mr. Naylor explained that the landlord's hydrometer had got out of order, and until he got it repaired he had to measure by guess. He pointed out that Mr. Crossley had been in the trade 24 years and had not had a single record against him. In Shuttleworth's case Mr. Naylor explained that when Mr. Randerson made his purchase they had just got to the end of the barrel. Seeing that his client kept as much as 110 gallons in one barrel there was a considerable amount of evaporation before the barrel was emptied. Mr. Naylor suggested that Mr. Randerson might have mixed the Irish and Scotch whisky in the analysis, but the inspector maintained that that could not possibly have taken place. Eventually, Crossley was fined 20s. and costs for selling adulterated gin, and 1s. and costs each in regard to the Irish whisky and the rum. Shuttleworth was fined 20s. and costs for selling adulterated Irish whisky, and 1s. and costs in respect of the Scotch whisky.—costs in each case £1 1s. 6d.

At Carnarvon, on February 10, the police summoned J. Roberts, Black Lion, for selling rum containing 19½ per cent. more water than is allowed by law.—The defendant, who pleaded that the adulteration was an oversight on the part of his wife, was fined 5s. and costs.—Wm. Hughes, Llanfair Arms, pleaded guilty to selling whisky which had 5½ per cent. added water.—A previous conviction having been proved, the defendant was fined 5s. and costs.—R. E. Roberts, a grocer, residing in New-street, was summoned for selling spirits of nitre which was not of the prescribed strength.—Mr. H. Lloyd Carter, who appeared for the accused, explained that there was no intention of deceiving the purchaser. The bottle from which the spirits of nitre was sold had been in the defendant's possession for some time, and the deterioration which had taken place in the quality was entirely due to evaporation.—The bench ordered the payment of costs only.

At Westbury, Wilts, at the Police-court on February 10, the Frome United Brewery Company were summoned for selling whisky below the proof allowed by statute. Frank Beardsley, inspector under the Food and Drugs Act, prosecuted, and proved having, on January 20, purchased three-quarters of a pint of whisky at the Great Western Railway Refreshment Room, for which he paid 3s. He sent it to the public analyst, and produced his report, which stated that the spirit was 17 per cent. below the limit of the Statute Act. Mr. P. Crutwell appeared for the defence, and pleaded guilty, stating that the company were simply brewers and not dealers in spirits. They had a standing order with Mansfield and Bailey to supply the spirits direct. How they became diluted they did not know. The defendants were fined £5 and costs.

DISEASED MEAT.

AT Guildhall, London, on February 5, Walter Hart, of Butcher's-row, Salisbury, a butcher, was summoned before Alderman Sir R. Hanson, M.P., for sending to the Central Meat Market the carcase of a sheep which was diseased and unfit for human food. Inspector Terrett gave evidence as to the seizure of the meat at the shop of Messrs. Goudge and Reeve. Instead of weighing 40lb. or 45lb. as it would have done had it been in a healthy state, the carcase weighed only 23lb. It was eventually condemned by Alderman Newton. Hart had been repeatedly cautioned for sending bad meat to the Central Market. Sir Reginald Hanson observed that in this case there was not positive proof that defendant saw the meat after the lamb was killed. Therefore he should not send him to prison, but would impose the *maximum* penalty of £50 and £3 3s. costs.

FREDERICK HALL, a cattle dealer, of Hilperton, near Trowbridge, Wilts, was summoned for sending to the market four pieces of beef which were unfit for human food. It appeared that Hall was in a small way of business. The Alderman told him he must have known that this was filthy meat. He should take into account his position, and fine him £20 and £3 3s. costs.

AT Clerkenwell, on February 13, John William May, of 97, Charterhouse-street, St. Sepulchre, was summoned at the instance of the Holborn Board of Works for exposing for sale eight quarters of beef which were unsound, unwholesome, and unfit for human consumption. Inspector Billing said he went to the defendant's premises on January 8, and saw four boned hind quarters of beef hanging outside the shop, and on going inside saw two fore quarters of beef on a block and two men taking out the bones. In a basket he discovered two further quarters in a very diseased condition, the meat showing evidence of tuberculosis. All the other quarters also showed signs of tuberculosis. Dr. Bond said he examined the meat in question and found it tubercular, and very unsound. Defendant said he had carried on business for 18 years. In January he was away from his business owing to ill-health. He sold meat on commission, and it was no interest to him to sell unsound meat. A fine of £10 was inflicted.

JOHN MEDNER, of 28, Granville-square, Clerkenwell, was summoned for exposing for sale 91 sheep's livers, which were unsound, unwholesome, and unfit for human consumption.—Inspector Billing proved seizing the livers from a shop in Charterhouse-street. Defendant was a servant in the shop.—Dr. Bond said he examined the livers, and found them flukey and diseased.—Mr. Ricketts, solicitor, who defended, denied that the livers were exposed for sale. The inspector called at an early hour in the morning before the livers were sorted from the crates.—Mr. Horace Smith fined the defendant £10.

HENRY BURCHALL, of 3, Charterhouse-street, St. Sepulchre, was summoned for exposing two sides of beef and a bullock's liver and lungs, which were unsound and unfit for the food of man.—A fine of £5 was inflicted.

DISEASED MEAT IN ABERDEEN.

IN Aberdeen Police-court, before Baillies Murray, Taylor, and Farquharson, two cases relating to the sale of diseased meat in Aberdeen was decided. The first case was that of Georgina Rennie, who was charged with having had on her stall in the new market 26 pieces of beef, which she intended for sale as human food, for which purpose they were unfit. The sanitary inspector, on discovering the beef, had applied for a warrant to seize and destroy it, and this had been immediately granted. Accused pleaded guilty to the charge, and had little to say in defence of her action. Baillie Murray declared that the public would have to

be protected against the sale of such meat, and the full penalty would be imposed, namely, a fine of £10, with expenses amounting to 20s., the alternative being one month's imprisonment. Rennie was allowed a period of 14 days within which to pay the fine.

The second case was that of James Paxton, flesher, Wales-street, who was charged with having had for sale as human food, in a shop in Jack's Brae, on January 25, eighteen pieces of beef which were diseased, and for the seizure and destruction of which a warrant had been granted to the sanitary inspector. Paxton pleaded not guilty to the charge, and was defended by Mr. George Duncan, advocate. From the evidence which was led, it appeared that the meat was lying on the floor of the back shop, and had been pickled, but too late to prevent decomposition. Baillie Murray asked one of the sanitary inspectors if the beef would have done for cat's meat. "Cats would not have eaten it," was the reply. It was stated by the defence that the pieces of beef were originally intended by Paxton as Christmas presents for his customers, and that the pieces found in his shop were those which were left over from the distribution. Paxton, on discovering that they had gone wrong, resolved to send them to the manure works, and when the sanitary inspector appeared in the shop, he was simply waiting for a convenient opportunity to do so. The Magistrates found the charge proven, and Paxton was warned that his offence was a very serious one, as he was spreading disease in the community by the sale of bad beef. In the hope that he would take a lesson, a lenient sentence was pronounced, namely, a fine of £2 10s. with expenses amounting to £1 4s. 6d., the alternative being 21 days' imprisonment.

CHARGE AGAINST NEWPORT BUTCHERS.

AT Newport Police Court, on February 5, Robert Duckham and James Duckham, butchers and dealers, were summoned for having in preparation and intended for food the carcase of a cow which was unfit for human consumption.—Mr. A. A. Newman prosecuted and Mr. W. L. Moore defended.

Spencer Jones, inspector of nuisances, said that on January 30 he visited the public slaughter-houses in Wyndham-street, where he saw the carcase of a cow hung up. It was fully prepared for the market, and a man came for it whilst he was there. He noticed that the walls of the chest had been stripped, and part of the diaphragm was taken away. Parts of the lungs and liver were missing, and he noticed that there were signs of disease. He informed the owners (Messrs. Duckham) and the Medical Officer of Health. Messrs. Duckham would not consent to the destruction of the meat, and he was obliged to get a magistrates' order for its destruction. In cross-examination witness said that Messrs. Duckham and other butchers usually consented readily to the destruction of carcasses found to be diseased. They could not always tell whether an animal was diseased until it was killed.

Dr. John Howard Jones, medical officer of health for the borough, said that when he examined the carcase he found that the lining of the chest walls had been stripped from the ribs. Fragments remained; and they bore signs of old pleurisy. The greater portion of the diaphragm had been cut away, and the portion remaining showed signs of pleurisy. Part of one of the lungs had been taken away, and the part remaining was riddled with tubercles. Part of the surface of the liver adjacent to the right lung contained the remains of diseased growth, and part had been cut away. He held that the animal had suffered from tuberculosis, and he considered that the flesh was not fit for human consumption.

Mr. Newman said that the case need not have come into court if defendants had consented to the destruction of the carcase without the justice's order.

Mr. Moore, in defence, said that no fault was found with the prosecution, but the defendants only wished, before the carcase was destroyed, to obtain the opinion of an independent expert.

After some discussion between the solicitors and the bench, Mr. Newman said that the prosecution was necessary to justify the seizure of the meat.

Mr. Moore said that the best judgment in the case would be one that would restore harmony between the parties. There was no intention to offer the meat for food; there was no contradiction that the carcase was diseased. Messrs. Duckham were perfectly willing to pay the costs of the case, and to raise no further question upon it.

The bench said that the inspector had acted very properly in seizing the meat, but they did not think that the case cast any aspersion upon the character of the Messrs. Duckham. If defendants would pay the costs, the case need go no further.

This course was adopted.

LIGHT FINES IN BIRMINGHAM.

A NUMBER of cases under the Adulteration Acts were heard at Birmingham on February 7th. Joseph Beards, Bellbarn-road, was fined 20s. and costs for selling butter containing 90 per cent. of foreign fat.—A similar penalty was imposed on William Raithe, provision dealer, Arthur-road, Saltley, for selling butter adulterated with 75 per cent. of foreign fat. Defendant's wife said she bought the article as butter from Mr. R. C. Evans, Great Hampton-street. Mr. Parker, chief health inspector, said Evans could be summoned in the County Court, and the authorities would give defendant every assistance. Mr. Fisher advised retailers to insist on having a warranty, and the inspectors could then take action in another way. The magistrates were determined to put a stop to these frauds on the public, and would inflict heavy fines or imprisonment.—William Webb and Thomas Ford, both of Inkerman-street, were each fined 20s. and costs for a like offence, and George Taylor, milk dealer, Oozells-street, North, was fined 20s. and costs for selling milk containing 36 per cent. of added water.

THE PRESERVED PEAS CASE.

MR. H. C. SUMMERS, a provision merchant, carrying on business with others under the name of George Mence Smith, in the Borough, and many other parts of London and its environs, was summoned before Mr. Fenwick, at Southwark, on February 5, by Mr. A. Grist, sanitary inspector to the St. Saviour's Board of Works, for selling a bottle of peas so adulterated with copper as to be injurious to health.—Mr. Frank Dodd conducted the prosecution, and Mr. H. Bonsey, on behalf of the Metropolitan Grocers' Association, defended.—A large amount of expert evidence was called, and the hearing occupied three days.—Mr. Fenwick, in giving judgment, thanked the learned counsel on each side for the very great assistance they had afforded him in this important case. So far as he was concerned, it was an extremely difficult case to decide, owing to the conflicting evidence which was given by scientific witnesses, whose ability and eminence were beyond dispute. The defendant was charged, under Section 3 of the Sale of Food and Drugs Act, with selling an article of food which was mixed or stained with an ingredient that was injurious to health, and it was said that the peas having been treated with copper in such a manner that a bottle or a pound of peas contained eight-tenths of a grain of copper, or 3.16 grains of sulphate of copper, the defendant in selling those peas had brought himself within the operation of the Act. It was useless for him to go into the technicalities at great length. He had brought to bear upon the case his best consideration and attention, and

he had gone carefully through the whole of the evidence on both sides, and had considered the authorities put forward by the various witnesses. The conclusion he had come to was that, having regard to the whole of the evidence and the quantity of copper found in the peas, the prosecution had succeeded in establishing a case against the defendant, and he should impose a penalty of 40s. and 12s. 6d. costs.—Mr. Beck asked his worship if he could state a case, as the matter was very important to the trade.—Mr. Fenwick: I don't know that I could state a case, as no point of law arises; but you have an appeal to quarter sessions.—Mr. Beck intimated that the defendant would appeal, and asked what sureties would be required.—The clerk (Mr. Coates) said two sureties in £40 would be required, and notice within six days.

ADULTERATED OLIVE OIL.

AT Keighley, on February 7, George Henry Pedley, manager of the Haworth No. 1 Co-operative Store, was summoned for selling adulterated olive oil. Mr. Randerson submitted the analyst's certificate, stating that in 4 oz. of olive oil there was 40 per cent. of olive oil and 60 per cent. of cotton-seed oil. Mr. A. Platts, for the defendant, said that the oil was purchased in June last from Mr. Moulding, Keighley, and was evidently supplied as cotton-seed oil in mistake for olive oil. He pointed out that in the last six months only 5 oz. of olive oil had been sold at the co-operative store. Mr. Moulding had taken means to call in the oil that had been sold and to replace it with the proper article.—The Chairman remarked that it was a very glaring case, and the bench imposed a fine of 40s. and costs—£1 1s. 6d.

IMPORTANT APPEAL.

BEFORE Lord Justice Lindley and Lord Justice Kay, on Feb. 10.—Cook v. White.

This was a case stated under the Sale of Food and Drugs Act, 1879. The question was whether a summons against the respondent under section 6 of the Sale of Food and Drugs Act, 1875, was within the time prescribed by section 10 of the Act of 1879. Section 10 provides as follows:—"In all prosecutions under the principal Act [meaning the Act of 1875], and notwithstanding the provisions of section 20 of the said Act, the summons to appear before the magistrates shall be served upon the person charged with violating the provisions of the said Act within a reasonable time, and, in the case of a perishable article, not exceeding 28 days from the time of the purchase from such person for test purposes of the food or drug for the sale of which in contravention to the principal Act the seller is rendered liable to prosecution. . . ." By section 25 of the Act of 1875 it is provided that if a person prosecuted under the Act show that he had purchased the article in question as the same in nature, substance, and quality as that demanded of him by the prosecutor, and with a written warranty to that effect, he shall be discharged from the prosecution; and section 27 provides that persons who give a false warranty shall be liable to a penalty. On April 28, 1895, milk was purchased for the purposes of analysis which was found to be adulterated. A summons was served on the seller, which was heard on May 24. He proved that he had bought the milk with a warranty from the respondent, and the summons was dismissed. Thereupon a summons was taken out against the respondent, which was served on May 27. The magistrates dismissed the summons on the ground that it had not been served within 28 days of the purchase for test purposes. It was contended, on behalf of the appellant that section 10, in so far as it prescribed 28 days, applied only where the person charged was

the person from whom the purchase was made for test purposes.

Mr. Macmorran, Q.C., appeared for the appellant; the respondent was not represented.

The Court allowed the appeal, and remitted the case to the magistrate, with the expression of their opinion that the latter part of the section did not apply where the article was not bought of the original vendor for test purposes, and that, in their opinion, the summons had been served within a reasonable time.

SHEFFIELD AND ADULTERATION.

MR. A. H. ALLEN, city analyst, reports that during the three months ending December 25, he analysed a total number of 202 samples. Of 103 samples of milk, 74 proved to be genuine; 22 were of inferior or suspiciously poor quality, but not sufficiently bad to justify their positive condemnation as adulterated; three consisted of skimmed or separated milk; three were adulterated respectively with 7, 10, and 20 per cent. of added water; and one sample sold as "Old Milk," in addition to being skimmed, was adulterated with 20 per cent. of added water. Of 34 samples of butter, 30 were genuine, the remaining four consisting of margarine as defined by the Margarine Act of 1887. Ten samples of lard all proved to be genuine. Six samples of mustard consisted of genuine ground mustard, without admixture of starch, flour, or other diluents. Of ten samples of coffee nine were genuine, the remaining sample being adulterated with 50 per cent. of chicory. Ten samples of malt vinegar have been received, of which three had the characters of malt vinegar and two others were of fair quality. Four other samples contained added acetic acid of the strength of vinegar to the extent respectively of 50, 50, 67, and 90 per cent.; the last sample in addition containing 0.06 per cent. of free sulphuric acid. The tenth sample contained only a small proportion of malt vinegar. Of 17 samples of spirit 11 were within the legal limit of strength, the other samples being diluted with water beyond the limit named in the Sale of Food and Drugs Act Amendment Act of 1879. Of six samples of paregoric five were of fair quality, but one was deficient in alcohol, containing only two-thirds of the proportion directed to be used in the preparation of the paregoric or paregoric elixir of the British Pharmacopœia. Of six samples of laudanum four were of fair quality, one of inferior quality, and one deficient in alcohol, containing only about two-thirds of the proportion directed by the British Pharmacopœia to be used.

SOMERSET HOUSE ANALYSTS.

THE work of the Somerset House analysts, says the *County Council Times*, in dealing with samples submitted to them, which have been previously examined by inspectors under the Food and Drugs Act, has often been unsatisfactory in its results—to such an extent, indeed, that either the Government officials or the county analysts have been absolutely wrong in the conclusions at which they have arrived. And while it has been the general opinion that the county analysts have been, in the majority of cases, in the right, it has been a somewhat delicate matter to give a decided expression of opinion to the effect that the gentlemen who differed from them were wrong. After a perusal of the correspondence which has recently passed between the Durham county analyst and the Somerset House authorities, through the medium of the clerk of the County Council, there can be no two opinions on the matter. In the case in question, the dispute arose out of the analysis of a sample of lard—the county analyst, Mr. W. F. Keating Stock, declared that it contained 10 per cent. of cotton seed oil, while the Somerset House officials maintained

that it was quite pure. Mr. Stock thereupon obtained a description of the test applied at Somerset House, and after inducing a number of well-known analysts to experiment with this test, he received from them strong expressions of opinion with regard to its unreliability. His own analysis, which was made by means of a recognised test, was confirmed by a separate one made by Mr. Alfred Allen, the West Riding public analyst. Here it is almost certain that the verdict of Somerset House was wrong; so when can Somerset House be trusted? In dealing with such an important matter as this, where the working of an important Act which safeguards the public health is concerned, surely the counties have a right to expect that the Government will see that its servants are at least competent—or the County Councils might dispense with their own analysts and inspectors at once.

CORRESPONDENCE.

"THE TRADER AS 'CORPUS VILE.'"

To the Editor of FOOD AND SANITATION.

SIR,—Under the above heading, your issue of February 1st contains some remarks upon correspondence, to be found at page 56 of the same issue, with which correspondence I am myself very intimately associated. For the publication of that correspondence I am not responsible, and I feel considerable regret that some of the letters, which were written in the easy style of familiar intercourse, should have appeared without revision. My feeling is that, at any rate, critical remarks were hardly deserved by the friends who had come to my help in a difficult position; and although it was not even suggested to me that the letters should appear in the columns of a public print, I feel bound to apologise to Dr. Bernard Dyer for the way in which his letter was introduced, presumably by yourself.

On the general question, it appears to me that your strictures, as applied to public analysts, are tinged with unnecessary severity. Anyone who can go back to the state of things which existed before the Food and Drugs Acts were in operation, both as regards the amount of adulteration and the resources available for its detection, must recognise the enormous improvement which has taken place; and I submit that whatever credit is due in this matter is due, to a very large extent, to the untiring efforts of the public analysts. If mistakes have been made, we have it on very ancient authority that "the man who never made a mistake never made anything."

As to variations in methods, I should like to say that, if public analysts are to be bound to go precisely by rule and rote, the ingenious sophisticator of Food and Drugs will have a very happy and prosperous time of it. And I would respectfully suggest to you, sir, that on reflection you will probably confess (to yourself) that with set methods new forms of fraud will often escape detection. Public analysts have ever shown themselves willing to publish any new discovery, and it is only fair that they should know what they have to meet when they are unfortunate enough to differ from the chemical referees at Somerset House.

Your sympathy with the trader is an exceedingly proper sentiment, with which I heartily agree, but from what I have seen during my somewhat lengthy experience as a public analyst I should say that the trader had very small cause for complaint as regards injustice.—Yours faithfully,

W. F. KEATING STOCK.

County Analysts' Office,
Darlington, Feby. 5, 1896.

HOLMFIRTH SEWAGE DISPOSAL SCHEME.

On the 29th ult., Colonel J. T. Marsh held a Local Government Board Inquiry with respect to an appli-

cation of the Holmfirth Urban District Council for sanction to borrow £16,500 for the purpose of sewage works. It was explained that the council were compelled to take the present steps by the decision of the County Court Judge in the action instituted by the West Riding County Council under the Rivers Pollution Act, 1875. Mr. J. F. Beesley, M. Inst. C.E., of Westminster, is the engineer for the scheme, which is to be that known as the International process of Ferozone and Polarite.

KEPHIR.

By C. D. SPIVAK, M.D.

Read before the Philadelphia County Medical Society, June 26, 1895.

THE important rôle which milk plays in the human economy in health and in disease in all periods of life is universally known. Every physician, however, is aware of the fact that this ideal food, as it is called, is in its natural state, in the majority of cases, not fit for use, and in certain other cases positively harmful. From time immemorial man has made strenuous efforts to improve the natural product by subjecting it to various modifications. Boiling must have been the most primitive mode of improvement. Dilution with various fluids, sterilisation, peptonisation, pancreatisation, etc., are improvements well known to every modern physician. By subjecting milk, under certain conditions, to the influence of temperature, light, and air, various food stuffs can be produced. The different fungi and schizomycetes which float in the air find in milk a rich soil for the development of their kind. It is but a few decades since we became aware of the existence of butyric acid and mucous fermentation in milk. But the primitive people were excellent macroscopists; they observed and experienced. They have learned to make different kinds of cheese; the Don Cossacks have their *aryan* (an acid fermented milk); the Swedes make *tilmjolk* (a mucous fermented milk). The savages knew also the secret of producing an alcoholic fermentation in milk. The Tartar nomads, the dwellers of the steppes, who possess large herds of horses, knew how to produce an alcoholic beverage from mare's milk, which they call *kumyss*; while the Tartar mountaineers who inhabit the northern slopes of the Caucasian Mountains, and who own extensive cattle ranches, could manufacture a similar beverage from cow's milk, called *kephir*. Both products have been known to the Tartars for centuries, but the civilised world learned of *kumyss* about a century ago, and with *kephir* we have been acquainted only for the last two decades. It is to the latter product that I wish to call the attention of the medical profession. The facts that *kephir* is used extensively as a dietetic and therapeutic agent in Russia, Germany, Switzerland, Italy, and Holland; and that numerous experiments have been made and investigations on a large scale, conducted by such eminent clinicians as Dujardin-Beaumetz, Jules Simon, and Hayem (Paris), Eichhorst (Zurich), Weyse and Monti (Vienna), Lépine (Lyons), Nanu (Roumania), Mandowski (Badenweiler), and Sorokin and Podwysotski (Russia), justify me in presenting before you this subject.

The ferment which is used to induce an alcoholic fermentation in milk is entirely different from all the other known ferments. In order to make beer, wine, vinegar, bread, etc., the ferments are easily obtained; they are, so to speak, omnipresent. In order, however, to produce an alcoholic fermentation in cow's milk, it is necessary to have a special ferment.

This special ferment is known among the Tartars under various names—seeds, grains, the millet of the prophet, etc. In its fresh living state the ferment is composed of white bodies, usually of irregularly roundish form, equal to or exceeding a walnut in size. They have their surfaces crisped with blunt projections and furrowed like a cauliflower.

They are of a firm, toughly gelatinous consistence, becoming cartilaginous, brittle, and of yellow colour when in a dry state. When placed in milk the *kephir* grains begin to grow and increase in size. The larger ones split into smaller, each of which in turn undergoes the same process of growth and reproduction. They grow so rapidly that in the course of three to four weeks they double in quantity.

The origin of the *kephir* grains is shrouded in mystery. The current legends among those people describe them as of divine origin, a blessing sent down from Allah through his prophet Mohammed. Among the many wild superstitions which cluster around the *kephir* grain there is the belief that whosoever sells or gives away gratis his grains causes thereby his remaining grains to lose their fermentative power. They were even forbidden to be given away as a dowry. The newly married had to steal the grains when making the first visit to their parents, a theft of which all concerned were aware. This injunction was so religiously kept that until the sixties there was not one European who knew anything about the existence of the grain.

In 1866 Djogin read a short paper on *kephir* before the Caucasian Medical Society. In the following year Sipowitch presented some more data about the grains before the same society. Ten years later Shablowski presented a few additional facts about the fermented product. In 1881 Kern made, for the first time, a thorough biological investigation of the grains. In 1882 B. N. Dmitrieff, a practising physician in Yalta, Crimea, published his observations upon *kephir* and elaborated the process of preparation as it is used at present. To the latter the medical profession is indebted for the application of *kephir* as a dietetic and therapeutic agent. The morphology of the *kephir* grains was further elaborated by Kern, Sorokin, and Schtange.

The *kephir* grain is a composite body made up of three different organisms:—

1. *Saccharomyces cerevisiæ* (Meyen), or yeast fungus;
2. *Bacillus acidi lactici* (Pasteur); and,
3. *Dispora caucasica*, Kern; or *Bacillus kephir* (Sorokin), a rod-shaped bacterium. The rods are united together into filaments, which are closely interwoven in countless zigzags, and they are firmly connected by their tough gelatinous membrane. Notwithstanding the fact that the above-named bacteria follow the laws of their kind, yet all three take an active and equal share in the process of producing the *kephir* fermentation. The happy cohabitation and co-operation of this family of different elements, or, as the biologist would say, commensalism, is considered a unique phenomenon in biology.

The chemical analysis of the grain was made by Struve. It is composed of—

Water	11'21
Fat	3'99
Peptone dissolved in water	10'98
Albuminoids dissolved in ammonia ..	10'32
Albuminoids dissolved in caustic soda	30'39
Residue	33'11
	<hr/> 100 00

Having briefly summarised the facts concerning the *kephir* grains so far as is known at present, I will say a few words about the chemical and physical changes produced in milk under the *kephir* fermentation.

When the grains are steeped in milk at a temperature of 10 deg. to 12 deg. R. they fall to the bottom of the vessel, and in about one to two hours bubbles form around them and they rise to the surface of the milk. The neutral or alkaline reaction of the milk gives way to an acid reaction. Simultaneously with the appearance of the bubbles there are formed in the folds of the grains fine curds. These changes indicate the beginning of the process of fermentation. A part of the sugar of milk having turned, through

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the action of the *Bacillus acidi lactici*, into lactic acid, thus forming an acid medium, another part of the sugar of milk is split by the action of the *Saccharomyces cerevisia* into CO₂ and alcohol. A thick foam is formed in the upper layer of the vessel which is composed of bubbles filled with carbonic-acid gas, which, having attained a certain size, burst; of fine curds of casein, which grow in size and fall to the bottom; and of the grains, which have by this time all risen to the surface, and which, in consequence of the constant movement of the bubbles seem to turn themselves from side to side. Between the lower layer, opaque and of white colour, and the upper layer of foamy consistence the milk becomes thinner, of a blue colour, and transparent. The vessel is then shaken up; the grains fall to the bottom; the curds are broken up into finer particles and are held in suspension in the fluid, which becomes thicker and thicker. After seven to eight hours the ferment reaches its maximum of activity; the foam does not form so readily even after shaking the vessels, the bubbles are smaller, the grains show lessened motility, and the casein becomes finer and finer, melting away as it were.

Now, a few words about the *modus operandi*.

The Tartars prepare the kephir in the following manner:—A leathern bag (*burdjuck*) is filled with fresh cow's or goat's milk, the kephir grains are thrown in, and the bag is tightly tied up. In summer the bag is placed in the shade, and in the winter where the sun can reach it. From time to time the bag is shaken. The children take the office upon themselves, and usually use the bag as a ball. It is also considered a duty that every passer-by should kick the bag and set it rolling. In a few hours, or at the utmost in two days, according to the season, the kephir is ready for use. The bag is emptied and refilled, using the same grains over and over again.

The method of preparation now used in civilised countries is that elaborated by Dr. Dmitrieff. The grains are placed in an earthen or darkened glass vessel, and are covered with milk, the bulk being three times that of the grains. The mouth of the vessel is covered with gauze or hygroscopic cotton with a view to exclude the ingress of dust only, and not to make it air-tight. The vessel is placed in a cool place at 12 deg. R., and as soon as the fermentation sets in—i.e., as soon as the grains rise to the surface of the milk—the vessel is to be shaken up every two or three hours, with a view to thoroughly mixing up the fluid and liberating the grains from the curds and the bubbles. After twenty-four hours the grains are separated from the fluid by means of a sieve, are placed in a clean vessel, and a new quantity of milk is poured on them. Unlike the Tartar's, this product is not used as a beverage, but as a "fermenter," or, as it is called in Russia, "*zakvaska*." The *zakvaska* is diluted with double the quantity of milk and poured into bottles, which are corked hermetically. The bottles must not be completely filled, as they may burst. They are kept at the same temperature as the *zakvaska*, but they do not require the exclusion of light. The shaking is to continue at regular intervals, but not in homœopathic fashion, as it may churn the milk. In 24 hours the kephir is ready for use, and it is called the first day's kephir or weak kephir. It has the following characteristics: the consistence of thin sour cream, a white colour, a pleasant sour-sweetish taste, slightly acid. When the bottle is opened it effervesces. The walls of the bottle and the glass which have held kephir are covered with fine curds.

When the bottle is left under the same conditions for another twenty-four hours the kephir is called second day's or medium kephir; in forty-eight hours, third day's or strong kephir. The weak, medium, and strong kephir refer to the quantity of alcohol and carbonic-acid gas contained in it.

A chemical analysis of the bottled kephir was made by Sadoven, Seidman, Weber, Weinberg, Sonnerat, Malerba, Menozzi, Tushinski and Silvanoff, Nenski and Rakovski Gartier. I give, however, only the table of analysis of Dr. I. Biel, because of its thoroughness:—

First day. Second day. Third day.

In 100 parts of kephir:—

Lactic acid	0.54	..	0.56	..	9.65
Sugar of milk	3.75	..	3.22	..	3.09
Casein	3.34	..	2.87	..	2.99
Albumin	0.11	..	0.03	..	0.00
Acid albumin	0.09	..	0.10	..	0.25
Hemialbumose	0.09	..	0.28	..	0.40
Peptone	0.03	..	0.04	..	0.08

In 100 parts of albuminoids:—

Casein	58.47	..	86.77	..	80.20
Albumin	3.05	..	0.90	..	0.00

Acid albumin	2.52	..	3.22	..	6.69
Hemialbumose	5.03	..	8.43	..	10.93
Peptone	0.93	..	1.38	..	2.18

Compare the foregoing analysis of kephir with the following table of analysis of milk:—

COMPOSITION OF MILK.

	Pro- teids.	Casein.	Al- bumin.	Hemial- bumose
In one hundred parts of milk:				
Human	1.38	0.65	0.33	0.32
Cows	3.63	3.16	0.29	0.16

COMPOSITION OF MILK IN ONE HUNDRED PARTS.

	Sp. gr.	PROTEIDS.	Fat.	Lactose.	Salts.	Water.
		Casein. Albumin.				
Human..	10.27	1.03 1.26	3.78	6.21	0.31	87.41
Cows ..	10.32	2.29 3.02 0.53	4.78	4.46	0.76	85.7

3.55

We arrive at the following conclusion in reference to the changes produced in kephirisation:—

1. Fat, salts, and water remain unchanged.
2. The quantity of lactose is gradually lessened from 30—50 per mille to 16—30 per mille in the second day kephir, and to 12—20 per mille in the third-day kephir.
3. Lactic acid is increased from 3.5—8.6 per mille in second-day kephir, to 6.3—9.0 in third-day kephir.
4. Alcohol is produced from 5.3—8.0 per mille in second-day kephir to 6.0—10.0 in third-day kephir.
5. Carbon dioxide is generated in quantities, approximately 10 per cent.
6. A part of the casein—namely, about 10 per cent.—is transformed into acid albumin and peptone; 10 per cent. into hemialbumose; and the rest loses its lime, and therefore becomes more digestible.

I shall not attempt to summarise all the theories concerning the part which each of the bacteria plays in producing kephir. Suffice it to say that, from a practical point of view, we attach the greatest importance to the fact that the casein of cow's milk, being digested by the human stomach with comparative difficulty on account of its forming large, hard, and tough curds, changes under the action of kephir into peptone and hemialbumose, and, having lost its lime, it forms, as in the human milk, small, soft curds.

THE POSSIBILITY OF THE MAINTENANCE OF ANIMAL LIFE WITHOUT BACTERIA IN THE ALIMENTARY CANAL.

SOME ten years ago Pasteur appended to a publication by Duclaux a note in which he expressed his deep interest in the question of a possible relation between bacterial life and animal nutrition. He had often, he said, in his talks with young scientists, spoken of the interest which would attach to attempts made to nourish a young animal (rabbit, guinea-pig, dog, or chick) with food completely deprived of bacteria. He was inclined to believe that life might be found impossible under these circumstances, and suggested that if this point were once proved, further experiments might be undertaken in order to determine the organism, or groups of organisms, best suited for aiding in the normal processes of digestion. These suggestions of Pasteur attracted considerable attention, but, as is too often the case, a number of individuals, failing to distinguish between a mere statement of opinion and a proved fact, took it for granted that the presence of bacteria in the alimentary canal was absolutely essential for the maintenance of animal existence.

Nencki showed that the digestive ferments by themselves, in the absence of bacteria, are able outside the body quickly and easily to transform food-stuffs into substances ready for absorption, and the alterations which certain substances, the albuminous, for example, undergo through bacterial action, are at first similar to those which result from the action of the digestive ferments. But here the similarity stops, for the end-products of bacterial decomposition are quite different, food-stuffs under their action being split up finally into aromatic acids, volatile fatty acids, phenol, kresol, indol, skatol, carbon dioxide, hydrogen, methane, and hydrogen sulphide; i.e., into substances which no longer possess any value as foods, and may even, under certain circumstances, prove injurious to the individual in whose alimentary tract they are manufactured. The only possible way of settling the question, however,

once it had arisen, was to submit it to actual experiment, and this has recently been done by Nuttall and Thierfelder, in the Hygienic Institute of the University of Berlin.

The employment of the chick, as suggested by Pasteur, was found to be inexpedient, since a certain number of hen's eggs are always infected. The animal found by the experimenters to be most suitable was the guinea-pig obtained by Cæsarean section. This animal was chosen on account of the ease with which it can be reared on undiluted cow's milk, and also on account of the independence which young guinea-pigs manifest from the moment of birth.

The apparatus devised for the reception of the young guinea-pig, after removal from the body of its mother, though somewhat complicated, is relatively simple when one considers the many difficulties which had to be met. A full description of it would be out of place here, but it is of interest in reading the original article to find how each detail was gradually worked out. Suffice it to say that the handling and feeding of the animal, the method of supplying it with air, the removal of excreta, etc., were all finally arranged, so that all danger of bacterial contamination was obviated. It is worth noting that the main difficulty encountered was not in the bacteriological technique itself, but in the disposal of excreta, so that the moisture of the latter should not condense upon the bell-jar or upon the animal under experiment; this drawback was finally overcome by allowing the excreta to fall into water covered by a layer of oil.

The Cæsarean section on the mother guinea-pig had to be done, of course, under strictly aseptic precautions, and it was found that failure of the experiment through bacterial contamination was most likely to occur between the time the abdomen was opened and the moment in which the animal was safely enclosed within the apparatus in which it was to be kept.

At the end of twelve hours the animal was fed with sterilised milk, which was given afterward every hour, night and day. By the eighth day after birth the guinea-pig had taken 330cm. of milk, and appeared normal, looking as healthy and active as the control guinea-pigs removed from the uterus of the same mother and reared in the ordinary way. At the end of this time the animal was killed, and the body opened aseptically. Neither in cover-slips nor in cultures, aerobic nor anaerobic, from both the small and large intestines, could a single bacterium be demonstrated. The experiment proves, therefore, that a guinea-pig can live at least for eight days on sterile milk without the presence of any bacteria in its alimentary canal. Whether or not an animal can live on a vegetable or a mixed diet under similar conditions has been left for further experiment to decide.

The demonstration of the possibility of growing sterile animals opens up another fertile field for research, namely, the differentiation of the products of bacterial action in the body from those of tissue metabolism. Investigators have already attempted work in this direction. Thus it may be remembered that Baumann tried to eliminate bacteria and their products from the alimentary tract, by administering calomel to fasting dogs. On the days following the dosage he could find no trace of paired sulphuric acids or of hippuric acids in the urine; the so-called oxy-acids (hydroparacumaric acid, paroxy-phenyl-acetic acid), however, were present, although in much diminished amounts. Baumann thought, therefore, that the paired sulphuric acids and hippuric acid occurring in the urine of carnivora could be traced directly back to decomposition within the intestine, while the oxy-acids, at least in part, owed their appearance to the metabolic activities of the tissues of the animal itself. As Nuttall and Thierfelder point out, however, there is no good evidence, or even a likelihood, that in Baumann's experiments the intestine was entirely free from living bacteria, notwithstanding the antiseptic action of the calomel, and it is, therefore, quite possible that the small amounts of oxy-acids present in the urine could have had their origin in bacterial decomposition. So far, Nuttall and Thierfelder have been unable to collect from a sterile animal enough urine to permit of such tests, but we are assured that their experiments are by no means as yet completed.

A whole host of allied problems immediately suggest themselves, and it is not improbable that the results of the investigation here reported will mark a new era in the study of the processes of digestion and metabolism.

WHO FEEDS ENGLAND ?

THE Berlin *National Zeitung* publishes a significant article under the heading, "Who Feeds England?" From every parish in the land, from almost every household in it, the

prayer daily ascends, "Give us this day our daily bread." But the people of Great Britain, for 190 days in the year, live wholly and solely on food imported from foreign lands. We can scarcely wonder that our Berlin contemporary should satirise the sending of a German Agricultural Commissioner into England to report upon our farming. Agriculture in England, says he, has been sacrificed to manufacture. England produces more eaters of food than ever, and yet produces less food than ever. His estimate of our position as to "our daily bread" is so pessimistic that he thinks we are fast hurrying from bad to worse, if not to the worst, and he marvels that our statesmen do not devote their entire attention to this first of all political questions. How are our people to get security of their daily bread? The thronging of the country folk into the towns is an ominous social symptom everywhere, but more ominous in England, as he thinks, than it is elsewhere, because nowhere else is land ceasing so fast to be devoted to its proper use, the nourishment of its inhabitants. He does not give the source of his figures; we take them as they stand. "Fifty years ago," says he, "one-third of the corn consumed in England came from abroad. At the present time, even after a good English harvest, two-thirds of it comes from abroad. Of the butter and cheese consumed by the Briton, two-thirds, at least, are produced in foreign lands. More than 600,000,000 marks are spent yearly by the English in the purchase of foreign meat." The real seriousness of this condition of things is not to be measured by the sums of money sent into foreign lands to buy things which our own land, under a full and rational cultivation, would so richly and plentifully produce. The light-hearted politician may sing "We have the ships, we have the money too." The danger lies in our sanguine dependence upon ships or upon money, when both really mean our dependence upon the soil and the labour of foreigners, and our wilful neglect of land so splendid in its capacity as that which is our own, the full and right use of which would make us independent, and give us again "our" daily bread.

But this condition of things is only the natural result of our sending university *ignorami*, financial touts and barristers to Parliament. The man who can make a hash of "dead" languages or drivel about philosophy is regarded with awe and reverence, whilst the one who asks for pure beer or whisky, light railways, aids to fisheries, compensation for tuberculous animals, encouragement for poultry, pig, fruit-growing, dairy farming, and other native industries is avoided as a pestilential nuisance. Yet the best Greek or Latin scholar in our House of Commons or Lords knows less Greek than did a Grecian ploughman, and does not know as much about idioms or pronunciation as the cows a Greek milkmaid milked. It is a pretty state of things truly when such trash is honoured as the height of knowledge.

FOR AND AGAINST THE SEPARATOR.

MR. J. R. CAMPBELL, B.Sc., assistant professor in the Glasgow Technical College, by his latest lecture on "The influence of the Separator on the Butter," has evoked much discussion which is not altogether in unison with common opinion. The chief points of the lecture were:—The cause of the bad keeping quality of separated butter is not the mechanical action of the machine but the lack of aeration; the cream is generally taken off too thick, and hence there is not a sufficient supply of lactic acid in the milk to effect the proper ripening in the time allowed; separated cream is greasy, raw, and without flavour; cream lifted from shallow pans is rich and full of flavour; the fat in the cream is not properly cured, and hence the butter does not keep. These deductions naturally led the audience to consider the old-fashioned ways of butter-making before the separator was introduced, and which is still continued in most dairies. Very few separators are working in Ayrshire; at least, not many, and most dairymen and dairymaids follow the practice of making butter from lapped milk. Indeed, it is generally admitted that the best butter is made by the best butter-makers from lapped milk; but it is, all the same, equally true that there is far more bad butter in this country than good butter, and it is easier to abuse lapped milk than separated cream. From the latter, very good sweet butter can be and is made, and the question now arises: "Would not the bad butter-maker become more likely to succeed if he or she adopted the separator?" The opinion is they would, and the demand for this class of butter—raw, uncured, and of little flavour—is largely increasing, and the farmer must endeavour to meet the demands. The main evidence is that butter from lapped milk keeps longest, but butter from separated cream is the sweetest and best when new. Consequently, it resolves itself to this:

Whether will it pay the farmer better to make butter which keeps for a lengthened period, fresh and well-flavoured, or butter which is so sweet and appetising that the consumer goes through an increased quantity in a shorter time? It must be at once evident that the greater the quantity of butter consumed, the better will it be for the farmer—provided he supplies the demand and does not allow the foreigner to do it for him.

WATER AT ASHANTI.

At each halting-place, says the *British Medical Journal's* special correspondent, a commandant has been appointed, whose principal duties are to prepare a good supply of water and to enforce every sanitary precaution. The place whence the water is drawn is guarded by a sentry, and every source of contamination prevented. The water is very bad, sometimes like porter. It is boiled, filtered with the Pasteur filters, and placed in native chatties.

THE LIZARD AS A HEALTH RESORT.

MANY London physicians now recommend, says the *Western Morning News*, the Lizard district to patients suffering from the effects of long residence in India or other hot countries. Such persons, it is found, soon begin to feel the benefit of the fine air of the tableland that lies behind the Lizard, and the villages of Helford, Carne, Porthollow, Mullion, Coverack, Cadgwith, and Porthleven have become favourite resorts for people who are suffering from debility or chest affections. Porthollow possesses a thermal spring, and magnesia is found in other springs in the Lizard district. The air is soft and balmy during the greater part of the winter, and when the sun is out a stroll over the cliffs is very enjoyable. Like Newquay, most of the towns in the Lizard district are destined to become winter as well as summer resorts for seekers after health.

ADULTERATION IN THE CITY OF LONDON.

DR. SEDGWICK SAUNDERS, the public analyst for the City, reports to the Commission of Sewers. "The hope entertained by public analysts throughout the kingdom that by this time the Legislature would have effected improvements in the working of the Acts relating to the adulteration of foods and drugs has not been realised," says the doctor. "Some attempt, however, has been made in this direction by a Select Committee of the House of Commons, who have taken voluminous but not exhaustive evidence upon the subject. It would be useless to reiterate the objections resulting from the present anomalous arrangements under which the chemical authorities at Somerset House are enabled to over-ride the decisions of the most eminent analysts, upon data they have never formulated; not to dwell further upon the extraordinary and discordant decisions given by magistrates throughout the country, nearly always in favour of the dishonest trader, and more in accordance with the idiosyncrasy of the individual functionary than the requirements of science and common sense. Innumerable instances could be adduced in proof of this, but I fear nothing can be done to remedy the evils until, on the one hand, analysts are provided with fixed standards or limits upon which their work should be based, and, on the other, the irresponsible action of the magistrates is controlled by such minimum penalties as would afford protection to the public, and adequate penalties upon the fraudulent trader." Dr. Saunders also reports that, exclusive of frequent examinations of the City's water supply, 266 analyses were made, viz., 28 in the first quarter, 51 in the second, 61 in the third, and 126 in the fourth quarter. These included 10 of arrowroot, 4 of bread, 20 of butter, 12 of coffee, 59 of drugs, 5 of flour, 139 of milk, 12 of mustard, 4 of tea, and 1 of well water. In the City it was deemed necessary to institute a prosecution in one case only, but some of the articles examined were perilously near adulteration. The goods supplied by retail traders in food and drugs generally throughout the City were found to be, in the words of the doctor, "fairly genuine."

DISINFECTION IN THE BARBER'S SHOP.

ACCORDING to *El Restaurador Farmaceutico*, it is proposed to impose upon all Spanish hair-dressers and barbers the duty of seeing that all their instruments, brushes, etc., are sterilised after being used. This is already done in Nordhausen, Saxony, but it is suggested that, as all dermatologists and hygienists recognise that many of the diseases of the skin arise through the medium of the barber's instruments, the obligation should become general. To this end it is sought that a law should enforce the disinfection of the instruments which may have been used, by being immersed in a solution of carbolic acid, while the scissors and razors are to be heated after each operation.

THE GIANT SAUSAGE OF KONISBERG.

THE revival of trade after the long stagnation which followed in the wake of the crusades, was responsible for many fantastic procession freaks in the larger towns of Western Europe. For instance, we are told that in the New Year's procession at Konisberg,

in 1558, a Bologna sausage exhibited by the "butcher-men" was 622 feet in length, and was carried on the shoulders of sixty-seven men and boys. The one exhibited in the same city in the year 1583 was over 1,600 feet in length, and weighed 434 pounds. But the giant of all sausages, and perhaps the largest thing of the kind ever made, was exhibited by the Konisberg butchers on New Year's Day in 1601, when they paraded the streets with a Bologna nearly three-quarters of a mile in length, and weighing 2,000 pounds. It was carried on the shoulders of 187 men, the first and last in the column each having it wound round their necks.

INFECTION THROUGH BOOKS.

At a recent meeting of the Société de Biologie, du Cazal and Catoin (*Münchener medicin. Wochenschrift*, 1895, No. 1, p. 22) detailed the results of an investigation to determine whether books were capable of transmitting contagious diseases. The streptococcus, the pneumococcus, the diphtheria-bacilli, the tubercle-bacillus, and the typhoid-bacillus were thus studied. Animals inoculated with cultures prepared from books contaminated with the products of the various conditions in which the organisms named were found developed the given affection. It is thus necessary to practice disinfection of books that have been used or in any way contaminated by persons suffering with infectious diseases.

ADULTERATION IN CORNWALL.

MR. BENEDICT KITTO, public analyst for Cornwall, states that during the quarter 61 samples were submitted to him for analysis, of which 55 were genuine. Of the remainder, three samples of milk contained water to the extent of 8, 15, and 40 per cent. respectively, one sample of lard contained an admixture of beef-fat, whilst a specimen of rum was found to be 36 degrees, and a specimen of gin to 2 degrees below proof. In concluding his report he writes:—Reviewing the whole of the past year, I find that the total number of samples analysed for the county, under the Food and Drugs Act, was 242, and of these 22, or a little over 9 per cent. were adulterated. Taking four of the articles of large consumption, I find that in the seven samples of bread tested during the year no adulteration of any kind was found. The same may be said of the seventeen samples of butter submitted for analysis. Of the forty-one samples of milk, however, six, that is to say 14.68 per cent., were found to have had water mixed with them, or to be seriously deficient of their natural amount of fat. Lard, of which eighteen samples in all have been analysed, was found in four cases to be not genuine lard, but mixtures of that substance with beef-stearine. This mixing of beef-fat with lard is done, I understand, to render the oily American lard sufficiently stiff to be acceptable in the English market, and it is no unusual thing in the county to see lard labelled as a mixture of lard and beef-fat.

WHAT IS A WARRANTY?

At Sheffield, on January 28, William Tate, provision dealer, 76, Duke-street, was summoned under the Food and Drugs Act for selling on the 18th December as butter an article which contained 33 per cent. of butter and 67 per cent. of margarine. Mr. H. Sayer (Deputy Town Clerk) appeared to prosecute, and Mr. Arthur Neal appeared to defend.—Mr. Neal at the outset said he intended to rely on a warranty.—Wm. Henry Harrison, inspector under the Health Department, said he called at defendant's place of business in Duke-street on Wednesday, the 18th December, in company with another inspector, and purchased a pound of butter at 1s. per lb. He told defendant it was for analysis, and defendant replied, "Oh, this is not Biggins'."—Mr. Neal: That was a joke in reference to a previous case.—The Deputy Town Clerk handed in the analyst's certificate, which showed the proportions alleged in the summons.—Mr. Neal, for the defence, said the warranty he relied on was the invoice—6½lb. of butter at 10½d. per lb. Defendant bought it from Mr. Thomas Johnson of Blonk-street, on the 13th of December. He went and got it because he had run short. He called defendant, who bore out this statement, and he also called Mr. Johnson, who explained the transaction. He said defendant asked for "seconds," and he replied he had none. His son told him that he thought there was a parcel containing some at the side. He found it, and after examining thought it was butter, and [told defendant he believed it was butter. He could not explain how it came to be a mixture, but he now believed it must have been sent back by someone.—Mr. Sayer contended that the invoice was not sufficient warranty.—Mr. Neal said it was invoiced "butter," and he thought it was on all fours with the cases the Stipendiary had already decided on that point.—The Stipendiary said the invoice was neither one thing nor the other. On the face of it, it was a false description. He would not admit it as a warranty, and imposed a penalty of 50s. including costs.—In a second case Edwin Arthur Walch, provision dealer, 216, Fitzwilliam-street, was summoned under the Margarine Act for exposing for sale margarine without having it labelled with letters at least one and a-half inches square. There was no dispute about the article, and when the same inspector called at the shop of defendant on the 18th of December the defendant said the ticket had got turned round. Defendant now said that one of his assistants had served a customer with six pounds that morning, and had turned the stuff round to cut it, and forgotten to turn it again with the label outwards.—The Stipendiary imposed a penalty of 20s. and costs.

THE National Trades and Industrial Exhibition, Glasgow.—A Gold Medal has been awarded to Jeyes' Disinfectants at the above exhibition. This brings up the total number of Jeyes' awards to 84.

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Food and Sanitation.

SATURDAY, FEBRUARY 22ND, 1896.

EDIBLE SEWER GREASE.

WE have always advocated the manufacture of margarine in the United Kingdom instead of sending enormous sums to Holland for it. There is no use

blinding one's eyes to the truth—margarine has come to stay—but it must be wholesome and made from pure fats of unquestionably cleanly origin. *The National Provisioner*, New York, is the representative organ of the American oleo producers and meat packers, and in its issue of a fortnight ago there appeared, under the heading, "Edible Sewer Grease," the following curious revelations of American oleo smartness.

It tells us that "sewer grease," nicely deodorised and flavoured, is one of the dainty dishes now served in the Great City by the Lake. The *Omaha World-Herald* furnishes details of the process of manufacture.

According to this authority, there is a man in South Omaha who makes \$10,000 a year by skimming for grease the sewers which carry the refuse from the big packing houses into the Missouri River, and the said party has established a plant for the purpose located in the country about a mile and a-half east of Albright, a suburb of South Omaha. The appearance of the "plant," if it may be so called, is not extremely prepossessing. A long, low shed, with a platform leading from the vats beneath to the "attic" of a small wooden structure, with a tall smoke-stack rising above, that's all there is to see. In the shelter of the shed are one or two men with long poles, at the ends of which are attached the sieve-like attachments which fishermen use sometimes to catch minnows from the base of a mill dam. They are not fishing for minnows, though, but just as the housewife skims the pans of milk, these men skim from the filthy, slimy water the *débris* of dirt, fat, grease, etc., that floats on the surface.

The sewer is opened a few hundred feet from the muddy Missouri, and flows into a wider channel about four or five feet wide. It is partially dammed by a sort of lock, sunk a little below the surface so as to catch the *débris* floating on the water's surface. The filthy semi-solid mass is scooped up and thrown into a tank, where it looks a good deal like a mass of mortar ready for the stone-mason. When the tank is full it is carted up the platform and dumped into the large iron tanks. There, when enough stuff is on hand to make a run, the engineer gets up steam and the mixture is given a thorough baking. The grease will then rise to the surface and is skimmed a second time. A much similar process is gone through with the fluid before it leaves the packing houses, but there is always some waste there, which is really valuable, if it can be caught in the next skimming.

We are told that just as it leaves the factory the article is worth from 3 to 6 cents a pound. This would make the price all the way from \$11 to \$20 a barrel. When one considers that the output of the year is several hundred barrels, and the expense of manufacture is so trifling, it is plain what an enormous profit is made. The output in 1893 was 580 barrels; 1894, 502 barrels. This year it will be smaller yet. It is easy to compute the net profit on 500 barrels, with the labour of two men, who receive ordinary wages, subtracted. The whole plant is worth but a few hundred dollars.

Such disgusting revelations ought surely to cause us to open our eyes and seek to encourage native industries.

MORE DANISH BUTTER RUBBISH.

MR. HARALD FABER, F.C.S., Agricultural Commissioner to the Danish Government, has tipped another load of rubbish on the English press. He wisely says not one word about the prosecutions Mr. B. Scott Elder, chief inspector for Durham County Council, brought, which proved the frauds in Danish butter. He carefully avoided any mention of our exposures of the humbugging lies about the purity of Danish butter, and does his work—we must admit well—of throwing dust in the eyes of the British public. He says:—

“Respecting the recent analyses of butter by the chemists of the Board of Agriculture, allow me to say, first, that Denmark herself has officially urged the desirability of strong inspection at the ports of entry in the interest of all honest producers both in Denmark and in the United Kingdom; and, secondly, that it has never been hinted that the analysts have made any mistake, but that Danish experts, acquainted with the results of the analyses, have fully concurred in the conclusions drawn from them, viz., that there is a *prima facie* case against a very small number of samples (seven out of over a hundred samples), but that no proofs of adulteration have been given. The suspicion can only be confirmed or refuted by investigations at the place of production, which are now being carried out.”

Until FOOD AND SANITATION made public the Danish Butter Swindle Mr. Faber protested Danish butter was the embodiment of every virtue—was indeed purity itself. And he once had the effrontery to try to bluff the editor of this journal into giving a good character to Danish produce. Now he admits that seven out of a hundred offer a *prima facie* case of adulteration. It would save time to admit 99 per 100, as Mr. Faber is not unsophisticated enough or credulous enough to swallow the nonsense that Denmark does not well know that Somerset House will report a butter containing 20 per cent. of margarine—genuine. But the press should know this and refuse Mr. Faber's rubbish tipping, and the press might also ask that we should have Somerset House analysts who can analyse.

PUBLIC POISONERS.

THE worst feature about the operations of such atrocious scoundrels as Messrs. Palmers, Limited, potted meat manufacturers, of 42A, Ocean-street, Mile End, London, E., is that the law does not allow a sufficiently severe punishment for their offences. They truly, therefore, deserve the widest advertisement that can be offered them by a watchful Press, says the *Eastern Daily Press*. “Under this title Palmers, Limited, have traded until recently as John Munro and Alexander Munro. The doings of this precious pair have been an object of interest to their unfortunate neighbours for many months past. There is nothing obviously unhealthy in the process of manufacture of potted meats. Yet, as conducted by Palmers, Limited, the conditions of the industry appear to have been anything but salubrious. On two separate occasions the persons dwelling within a short distance of the factory have been constrained to draw the attention of the Medical Officer of Health to the horrible stench emanating from the premises. As a result, the medical officer wisely bestowed some care on his investigation of the causes to which the nauseous and intolerable smell was due. Finally he made an official visit to the factory in July last, when he seized and condemned twenty-seven tins of corned beef, eighty-four tins of potted meat, and nineteen ‘assorted’ tins of fish, salmon, and rabbit. On the occasion of a second visit, on October 3rd, he seized thirteen tins of corned beef, two of rabbit, and sixty-one of soup. A further visit raised even this pretty record, and the officer ‘bagged’ no less than forty tins of corned beef and one hundred and eighty

tins of potted meat—leaving only five good tins of meat on the premises. In due course the torpid but sure hand of the law laid its heavy grip upon Palmers, Limited. John and Alexander Munro have now to serve six months' imprisonment, with the salutary stimulant of hard labour, for having had in their possession tins of meat which were unsound, unwholesome, and unfit for the food of man, and also—in the words of the indictment—for having the same in preparation. It is thus that the food of our poor is manufactured. The Munros are but one of the infamous and detestable brood that live by poisoning what to the masses of the East End poor represents the only possibilities of varied nutriment. But the suppression of a single such factory is matter for congratulation, and the general sense will be with the Recorder as to the justice of the penalty he has so properly inflicted.”

Happily for the public it is not thus that the food of our poor or rich is generally manufactured. We have, unknown as a writer to the manufacturers, been over many of our largest food factories. Not far from our contemporary's offices there is a firm of native manufacturers who can produce food of irreproachable quality. The public's lesson from villainies like this of Munro's is—buy from firms who have reputations to lose.

DANGEROUS MINERAL OILS.

SOME member of the London County Council might, with advantage to the public, inquire how it happens that some County Council official or other is always to the fore at inquests on victims of the low-flash-point American oils to lay the blame on the lamps instead of the American oils. The scientific “expert” gentlemen who recommended 73 degrees as safe and enabled the American oil gang to dump down in this country dangerous explosive rubbish, the sale of which is forbidden in America, have never explained the real reasons why they did it. One little fact in this connection is very significant.

Sealed proposals have just been invited by the War Department of the United States for supplying about 27,000 gallons of mineral oil, to be water white, of flash point *not lower than 135 degrees Fahrenheit*, and not higher than 150 degrees Fahrenheit; the specific gravity to be not less than 48 degrees Baume. Prospective bidders desiring full specifications and blank forms of proposals can obtain same upon application to James A. Moore, A.Q.M., General, U.S.A., Army Building, Whitehall-street, New York, N.Y.

It should be noted that America will not tolerate a 73 degrees flash point, but certain persons dupe our Board of Trade into adopting it in England, with the result, a few days ago in Soho, of eight persons being roasted alive. If 73 degrees be safe, perhaps the *Daily Chronicle*, for example, might explain how it happens that General James A. Moore, for the American War Department, prohibits the use of oil of lower than 135 degrees? We commend this conclusive and sinister fact to the notice of Mr. Jesse Collings. A recognition of its full significance may stop the roasting alive of one English person per day and the firing of hundreds of thousands of pounds worth of English property per year. It may also stop the game of a few who see a fortune should a certain invention in lamps be recommended by a Select Committee of the House of Commons; and it ought to cause the *Daily Chronicle* to stop printing ignorant rubbish like the following, culled from an issue of a few days ago:—

“Was it a glass lamp that caused the fire in Soho? It is stated that pieces of broken glass belonging to the reservoir of an oil lamp have been picked up among the ruins; and this is likely enough, for in spite of warnings innumerable this class of lamp is to be found in general use amongst the poor. If it upsets, and the glass is broken, the vapour is certain to ignite, the oil will begin to blaze, and before there is time to give warning the

house and the people in it may be doomed. The sale of lamps of the kind should have been stopped long ago, and if it turns out that the fearful calamity in Soho was due to one of these infernal machines, it is to be hoped that Parliament will come to the conclusion that something must be done. The Committee on Petroleum, which sat in the last Parliament, collected plenty of evidence to justify action. That Committee, we suggest, should finish its inquiry, and issue its report with all possible speed."

We knew the Chartered Company had "nobbled" the *Daily News*, but we should be sorry to think the American oil gang of thieves and perpetrators of arson had nobbled the *Daily Chronicle*. Our very able contemporary, the *Chemical Trade Journal*, in its last issue, has the following sinister remarks on the question:—

"At the St. Pancras Coroner's Court, on Saturday, Dr. G. Danford Thomas held inquests on the bodies of John Collins (55), sawyer, and Barbara Macmillan (77), a widow, whose deaths from burns were consequent upon the use by them of cheap glass petroleum lamps. In the case of the old lady, widow of a type founder, her death was due to her use of a penny night lamp which she persisted in using in spite of the remonstrances of her family. The foreman of the jury said it was quite time there was legislation to prevent the sale of these notoriously ill-made, fragile, and dangerous lamps, mostly manufactured abroad and imported into this country. Mr. James Gibbons, inspector of the London County Council under the Petroleum Acts, stated that the Council were desirous of legislation to this end, and requiring the marking or stamping of oil lamps by appointed authority as a guarantee that after testing they were found to be reasonably safe. He submitted a metal lamp which was sold at 6d., and was absolutely safe. As showing the necessity of the desired legislation, he mentioned that, according to the last available annual statistics, the Metropolitan Fire Brigade were called to 448 fires reported to have been caused by petroleum lamp accidents. Of these, 90 were ascribed to explosions, and 337 to the upsetting of lamps. There were, in addition, 3,061 small fires resulting from the use of these dangerous lamps, and causing damage—fires of which insurance companies were cognisant, but to which the fire brigade were not summoned. The County Council's inspectors had investigated 284 lamp accidents in the course of one year, 31 of which were fatal, involving the loss of 33 lives. The Coroner said there was the less excuse for the use of these cheap, fragile lamps, mostly 'made in Germany,' as a home-made safety lamp, constructed on principles approved by the County Council, could be had for 6d. In returning a verdict of accidental death in each case, the jury added a rider in favour of early legislation prohibiting the sale of obviously dangerous oil lamps. It would be interesting to know by whom and on what authority these inspectors are instructed to preach this wonderful doctrine of a 6d. lamp that is 'absolutely safe' provided it has been graced with the sanction of the grandmotherly caretakers of the Metropolis."

Editors of great dailies are not infallible—not even the youngest of them; and as this question involves the sacrifice of a life per day for the monetary advantage of a gang of the worst villains unhung even in America, Mr. Massingham might devote a portion of his mighty intellect to the question to enable the *Daily Chronicle* to publish the truth. Every independent investigator knows that it is not the lamps but the low flash murderous rubbish sent here by the American Oil Gang that causes these terrible roastings alive; and again let us emphasise the sinister fact—*there is not one State in America where the sale of these refuse oils is allowed.* The Standard Oil Company itself admitted that 40 per cent. of the oil distilled is of too dangerous a character for use in the States, and unless it can be sold in Europe it cannot be sold at all.

Professor Kedzie, of Lansing, Michigan, on learning

that England permits the use of oils flashing at 73 deg. F. said: "Your statement fills me with amazement."

Louisiana has a flash-point of 125 deg.; Maine has 120 deg.; Michigan 120 deg., and so on throughout America.

ANOTHER NAIL IN THE COFFIN.

Now that Parliament has opened, says *The Chemical Trade Journal*, [we are] drawing nearer to the time when, if all goes well, the discussion of the safe flashing point of burning oils will be re-opened. The necessity for this being done, will have once more been impressed upon the minds of those who give any thought to this matter, by the advertisements that have recently appeared soliciting tenders for the supply of mineral oil to Trinity House for use in lighthouses. The old stipulations are still in force, for the advertisement states that the 135,000 gallons required must have a flashing point of not less than 145 deg., or more than 160 deg. F. by the close test.

Since the Government advisers are so certain that a 73 deg. oil is all that can be desired for use by the general public, we suppose Trinity House will now begin to mend its ways, and Lord Rayleigh, as their newly-appointed scientific adviser, will see that the way is opened for the introduction of a lower flashing oil. It hardly seems necessary in a lighthouse, where everything is done methodically and with care, to use an oil which is safer than that being used daily in thousands of dwelling-houses in a careless, off-hand way, by ignorant and thoughtless people. But this anomaly is, of course, merely a freak, and counts for nothing. We are being constantly told that all the fault lies with the lamps, not the oil, a truth (?) which even the *Lancet* seems at last to have swallowed. We are open to conviction, but we cannot accept this lamp theory unless those who advocate it will pledge themselves to alter all the lighthouse lamps into "safety lamps," in which nothing but 73 deg. oil shall be burnt.

The lamp "improvers" are constantly trying to show (with meagre success, it is true) that the high-flash oils are more dangerous than the low, and they are certain that 73 deg. oil in one of the County-Council-modelled lamps, is quite safe. And so are we certain it is safe—quite as safe as gunpowder in a match factory. There are degrees of safety. To be in keeping with the cocksure assertiveness and assurance of the low-flash advocates, the above must surely be the "positive" degree, and we would fain reach the comparative before feeling safe.

But to return to the assumed danger of high-flash oil; if this assumption is true, what a terrible risk Trinity House runs in using such fatally high-flash oil in their lighthouses, and how imperative it is that, on behalf of the public safety, the lamps should be re-modelled on the latest C.C. lines, and burn low-flash oil. It is the only natural deduction, and yet we would dare the leaders of the low-flash party to advocate this obviously needful step being taken, either by the Government or Trinity House. No! that would be another thing altogether to distributing dangerous oil broadcast (at a fat profit) among poor and ignorant people, for the loss of whose lives, in hundreds a year, neither officials, importers, nor vendors can at present be held responsible. Refuge can always be taken behind the Government, who test and virtually guarantee the lot.

There is just one other point. The entire high-flash movement is attributed to the enfeebled condition of our insular mineral oil industry. This belief, and many wilfully misleading hints about the substitution of fair trade for free trade principles, we have explained and dispelled *ad nauseam*, but we would further point out that this country is not alone in thinking 73 deg. oil dangerous, no matter where it comes from. Many of the States in America have laws which speak for themselves, and Holland is now seriously thinking of forbidding the importation of any oil flashing below 104 deg. F. We only ask for 100 deg. We therefore desire it to be clearly recognised that the high-flash

movement is *not* only and solely supported by a few self-seeking, money-grubbing, fair trade fanatics, but by a number of honourable disinterested scientists and public men whose sole aim is the establishment of the truth, be it favourable to their opinions or not. Such men have and will spend time and money in carrying their quest to finality, and we insist that this ultra-trade support be reckoned with in judging the statements of the deeply self-interested low-flash partisans. If the testimony of all monetarily or officially interested parties on both sides were tabooed the truth of this long-disputed question would soon be reached—much too soon for the S. O. opine.

THE LATEST IN MILK ADULTERATION DEFENCES.

It has long been a standing joke amongst milk-vendors that the disease the Adulteration Acts soonest succumb to is an attack of Ricketts. With unerring instinct for a flaw in procedure and deadly argument Mr. Ricketts was in evidence again on Feb. 8 at Brentford.

Mrs. Annie Radford, of Gore Farm Dairy, High-road, Chiswick, was summoned by Inspector Tyler under the Food and Drugs Act for having sold milk which was adulterated to the extent of 5 per cent.—Mr. W. Ricketts defended, on behalf of Messrs. Morrison and Fleet, the firm who own the dairy.—Inspector Tyler said in this case a certificate was given by the public analyst, simply stating that the milk was adulterated with added water to the extent of 5 per cent. It was in his possession at the time the summons was applied for. Afterwards, a supplementary certificate was given, showing further details.—Mr. Ricketts said he objected to the admission of the second certificate, as it had been issued since the summons was taken out, and therefore did not comply with the Act.—Mr. Tyler said he had taken samples from the Gore Farm Dairy for the past eight years, and until this time nothing had been found wrong. The second certificate was explanatory of the first.—Mr. Ricketts said the first certificate did not comply with the Act. It was on "all fours" with the decision in the case of "Fortune and Hanson." In that case the certificate simply stated that the public analyst was of opinion that the milk contained five per cent. of added water. The magistrates held that it was inadmissible, as it failed to state the parts of which the milk was composed, the solids not fat, and the solids which were fat. They ruled that the certificate must show the parts of the article analysed. No supplementary certificate, or nothing which Mr. Bevan, the analyst, could say, would get rid of the requirement of the Act in this particular case. Mr. Montagu Sharpe (one of the bench) pointed out that their decision would not be based on the first certificate only, but upon Mr. Bevan's evidence in support.—Mr. Ricketts argued that water was not a foreign ingredient in milk. All milk contained a normal quantity of water, and as there was no difference between the natural and the added water, it was impossible to tell the exact excess of water in the milk. The first certificate did not comply with the 18th Section of the Act in that it failed to give the percentage of foreign ingredients. The prosecution therefore failed, as the certificate was the foundation of subsequent proceedings.—In spite of Mr. Ricketts expostulating that it would be "a very irregular thing," the bench decided to hear the evidence of the public analyst.—Mr. Bevan stated that the milk contained 3.48 per cent. of fat, and 7.99 per cent. of solids not fat. Colouring matter had been added, which was equivalent to the addition of five per cent. of water.—Examined by Mr. Ricketts, the witness said the colouring matter was harmless, and was added to improve the appearance of the milk. It was a foreign ingredient, just as much as added water was. In a physical sense, it was impossible to separate added from normal water. The lowest standard of fat in milk was 3.48. He thought the milk in question

contained 10 per cent. of added water, although he had only certified five.—Mr. Ricketts: Then your certificate is not accurate.—The Witness: If there was 15 per cent. in the milk, and I certified there was five, I should be correct, as I should be within the mark. You can't get over that. I only want to do your client every possible justice.—In answer to further questions, witness added that he had on previous occasions certified that milk contained 6 per cent. of water, and at Somerset House they held that he was wrong, but in other cases they had agreed with him, and in his opinion Somerset House was not always right.—Mr. Ricketts addressed the Bench at length. He submitted that no distinction could be drawn between a certificate which was issued for the purpose of a summons, and one issued for the purpose of a hearing. The second certificate was invalid, and should have been rejected as such by the Bench. It was no good to call the public analyst, and put in an amended certificate in order to patch up the deficiencies of the former one. They could not get over statutory requirements in this way.

The case was dismissed, which shows that Mr. Ricketts is a very hard nut to crack, and that with the many points as to forms of certificate and procedure the Acts are worse than a Chinese puzzle. As the law now stands no one knows what it is. Copper in peas, for example, is no offence at Bristol, but in Southwark it is a crime. This is very well for lawyers, but it is an axiom that when lawyers thrive most the public are the more victimised.

LEAD POISONING AT ECKINGTON.

THE danger of using lead pipes for water supplies has been shown at Eckington, near Chesterfield. In a report to the Chesterfield Rural District Council, Dr. Mackintosh stated that he had taken a sample of water from a tap at Holbrook, and had submitted it to the county analyst. He submitted the analysis, which showed the presence of lead to the amount of 28 grains per gallon. It also contained fresh organic matter, which might be derived from a peaty substance. This rendered the water open to considerable suspicion, and it was most undesirable for drinking purposes. A letter was read from the Local Government Board asking what steps were being taken in view of the outbreak of lead poisoning in Eckington district.

A special report on the matter by Dr. Mackintosh was read. It stated that the first case arose in November, and, as far as he could ascertain, the total number of cases was about 116. People of all ages had suffered, but adults to the greatest extent. The evil had now slightly subsided. He had taken a sample of water from a house to which the length of service pipe was 30 or 40 yards, and the analysis showed that it contained 28 grains of lead in solution. He believed fresh limestone had been put into the inlets of the reservoirs, and in Dronfield the authority had placed stand-pipes so that people would not have to drink water which had come through lead service pipes. The doctor strongly recommended the use of tin-lined service pipes in the future.

A letter was read from the Eckington Parish Council asking the Council to take steps to remedy the evil caused by the lead-poisoning.

Mr. Swallow moved that the reports and analysis be sent to the Local Government Board, and that Dr. Mackintosh take a sample of water from the reservoir for analysis. It was important that the Board should know if the water was pure before it went into the pipes.

Mr. Jackson: It is the chemical action of the peat on the lead which causes the poison.

Mr. Swallow: Well, we want to see what the water is like.

The resolution was carried.

There is no doubt whatever that a great amount of disease is caused by the use of lead pipes for water

supplies, and it would be well were the Local Government Board to deal drastically with the evil—especially in the parts of Yorkshire and Lancashire most affected.

PURE BEER.

A FEW years ago we were nearly alone in agitating for pure beer and justice to native barley growing and malting. To-day the subject is within the pale of practical politics.

Mr. Balfour, speaking a few days ago, assured an agricultural deputation that he regretted that other articles are gradually being substituted for barley in beer. "That is a misfortune, undoubtedly, for the farmer, and a misfortune also, I think, for the consumer. Mr. Gray alluded to the evil that had been done to agriculture by the action of Parliament during the last twenty years. I cannot recall at this moment anything in the last twenty years which Parliament has done adverse to agriculture except the repeal of the Malt Tax. That, as it has turned out, and as it has been actually worked, was, undoubtedly, the greatest blow ever levelled at the use of barley. Unfortunately, it is one of those steps which it is easy to make amid general applause, but which it is extremely hard to retrace."

It is something to have words so unequivocal as these from the leader of the House of Commons, and it is sincerely to be hoped that he will find a way to retrace the disastrous steps. But how came it that not a word was said about pure whisky? Why should Indian corn, potato, damaged fruit, etc., be used for whisky? Has this inflicted no injury on English, Irish, and Scotch agricultural prosperity? It is a queer thing that our agricultural spokesmen have invariably only half-baked ideas about the questions upon which they deputationise Ministers.

MILK.

WORKHOUSE MILK.

At Cavan, Sergeant Stuart, Inspector of Food and Drugs, summoned Patrick Boylan, one of the milk contractors to the Cavan Union, for supplying adulterated new milk, 80 per cent. added water, making a mixture of 180 parts.

Mary Conaty, in answer to Mr. W. J. Fegan, who defended, said she was in the employment of Mr. Boylan. On the day in question she milked the cows and brought the milk into the kitchen and put it into the cans. The cans were perfectly clean. There was no water in them. She measured two and a-half gallons. She helped Reynolds to put the milk on to the cart. There was no water added to the milk. It was sent from Mr. Boylan's in the same state as it was taken from the cows.

Mr. MacCarthy, magistrate, said he must hold it was an adulterated article.

Mr. W. J. Fegan submitted that on the evidence of last witness it was not adulterated, and it was a well-known fact that the analyst, on whose unsupported testimony the summons had been brought, had been guilty of serious mistakes.

Mr. MacCarthy: Even so. I can't hold this is a wrong certificate. It may be some defect in the nature of the cows, and it was defendant's business to keep cows that would supply the quality of milk contracted for. It is said that there were five previous convictions.

Defendant was fined £5 and costs, which seems a small sum if there were five previous offences. *The British Medical Journal* has been showing that the Irish paupers' lot is not a happy one from a sanitary point of view. It would be a worse one were it not for the kindly exertions of the much-abused Royal Irish constabulary.

At Bailieborough, Sergeant Keane, Inspector of Food and Drugs, summoned Mr. Charles Cranston, Rakeevan, for supplying to Bailieborough Workhouse, as a contractor, buttermilk which proved under an analysis

made by Sir Charles Cameron to be adulterated with 14 per cent. of added water, in addition to 25 per cent. allowed for churning purposes. The case was adjourned from last Petty Sessions, and the complainant was directed to forward the third sample in his possession to Somerset House, London, for analysis, also to write to Sir Charles Cameron to know if the sample he received was in a proper condition for analysis.—Sergeant Keane now produced a certificate from Somerset House which stated that the milk was adulterated with 25 per cent. of added water, after making a reasonable allowance for added water for churning purposes, also a letter from Sir Charles Cameron stating that the milk had undergone no change to prevent its being properly analysed.—The Magistrate said from the evidence he had no option but to convict the defendant, and the smallest penalty he could inflict was £5.

MR. KEARLEY AND MR. WALTER LONG.

TUESDAY'S debate in the House of Commons was not without interest.

Mr. Kearley called attention to the extensive importation of adulterated food products, especially milk, butter and cheese, and urged the Government to rigorously enforce the existing laws against such importations, with the object of protecting British and Irish agriculturists, and saving them from unfair competition. He moved as an amendment to add at the end of the Address the following words:—"And we humbly represent to your Majesty that no measure tending to mitigate the agricultural distress deplored in your Majesty's Gracious Speech will be efficient unless the existing laws against the importation of adulterated food products are rigorously enforced by your Majesty's present advisers, so that British and Irish agriculturists may be protected from unfair and nefarious competition."

Mr. Long felt bound to tell the House that the account of the hon. Member (Mr. Kearley) of the inaction of recent Governments in this matter was grossly inaccurate. It was no part of his (Mr. Long's) business to ask the House to believe that the adulteration laws were all that they might be, but he hesitated to express an opinion in what direction the reform should take place, as he intended shortly to move for the appointment of a Committee to inquire into the question, and to whom he looked with hope and some confidence to make recommendations which would enable the difficulty to be dealt with. He personally favoured consolidation and the placing of the whole of the administration in the hands of one Department. It was no part of his business to stop the importation of margarine, but merely to see that goods were really what they were stated to be. Far from the Government system being unsuccessful and inefficient, it had been successful and efficient. In May 1895, 284 samples were analysed, of which ten were found to be adulterated; from September 30 to October 31, fifty samples were found to be adulterated out of 146; during November there were twenty-nine cases of adulteration out of 145 samples analysed; in December the number of cases of adulteration fell to four, out of seventy-six samples; whilst during last January 116 samples were examined, and not one was found to be adulterated. He freely admitted that there was a difficulty in tracing the adulterated article from the consignee to the actual trader, and he thought a great deal might be done in the way of watching the articles after they had passed from the wholesale trader to the retail dealer. These subjects would be thoroughly examined by the Committee which he hoped before long would be sitting. He was most anxious that everything that could be legitimately done to protect the producer should be done.

It is, to say the least, rather impertinent of Mr. Walter Long, who has no practical knowledge of the subject, to accuse Mr. Kearley, who has a practical

knowledge of the question, of being grossly inaccurate, and it is unfortunate for Mr. Long that Mr. Kearley was strictly accurate, whilst Mr. Long was as inaccurate as he was grossly ignorant. True he was only the dupe of the Board of Agriculture, for, although the voice was the voice of Long, the hand was no doubt that of Elliott, potwolloper in general to the Board of Agriculture. Even Mr. Long ought to have enough intelligence to know that his answer was untrue, for, as he himself pointed out, until May, 1895, the Board did nothing. Is Mr. Long stupid enough to believe that this indicates efficiency on the part of the Board? Adulteration did not begin in May, 1895; it has existed for years, and the Board of Agriculture had to be cursed and kicked into moving even in May last. Members like Mr. Kearley do well in keeping such idle departments up to their work, for unless they are compelled to do something for their money they are quite satisfied to emulate Jerome's public official who slept in his office from ten to four, save on Saturdays, when he was put outside at two until Monday morning. When Mr. Long talks about all the samples analysed last month being pure, is he aware of the admission made by the Somerset House chemists, that they cannot detect margarine in butter if it does not exceed eighteen per cent., and if they analysed the butters why didn't Mr. Long inform the House the analyses at best disclosed only "possible purity"? We suppose because he did not know what he was talking about, any more than did his adviser, Mr. Elliott.

A MAGISTRATE ON THE LATE LORD CHIEF JUSTICE

It is a long time since we said our say on Chief Justice Coleridge's decisions. Mr. Denman, of the South-Western Court, is now of our opinion, as was shown in the case of Isaac Jeans, grocer, 227, Lavender-hill, who was summoned by the Vestry of St. Mary, Battersea, for selling a bottle of brandy below the strength prescribed by Act of Parliament.—Mr. W. W. Young supported the summons, and Mr. Beck represented the defendant.—The Chief Inspector proved the purchase of the brandy. He paid 2s. 6d. for the bottle. After he stated the purpose for which he had purchased the brandy, his attention was drawn to a label on the bottle stating that the brandy was 33 degrees under proof.—Mr. Beck relied on the label as being a sufficient disclosure, and quoted decided cases in support of his contention.—Mr. Denman observed that the bottle, being wrapped up in paper, there was no notice to the purchaser, as it was concealed.—Mr. Beck drew attention to the language of the Lord Chief Justice, who stated that a purchaser could not fail to see the notice, and nothing could prevent him or her taking the article back to the shop. An inspector, the Judge held, was a purchaser in the ordinary sense, and could not wrap himself up in official ignorance.—Mr. Young maintained that the question for the Magistrate to decide was whether the purchaser was prejudiced.—Mr. Denman said he was bound by the decided cases, although he was of opinion, with all respect to the learned Judge, that they could have been decided the other way. It was like a stone wall through which one could not pass. They could drive a coach and four through an Act of Parliament, but not through a decision of the High Court Judges. Personally he would have decided that the notice on the bottle was not a disclosure to the purchaser, as the letters were extremely small, while the words "Fine old brandy" were equally prominent. However, these were the decisions, and he was reluctantly compelled to dismiss the summons.

NESTLÉ'S CONDENSED MILK COMPANY propose establishing a factory in Kilkenny. About £25,000 will be expended in the venture, and some 150 hands employed. This factory would deal with 2,000 gallons of milk daily.

OLIVE OIL CASE.

At Midhurst, Frederick Pescod, Graffham, was summoned for selling olive oil, which, according to a certificate from Mr. Otto Hehner, public analyst, contained 100 parts of cottonseed oil. Mr. F. C. Blagg, of Portsmouth, appeared for the defendant, and pleaded not guilty. He objected to the certificate on the ground that it was directed to the wrong person. It was, he argued, addressed to the chief constable, whereas the Act stated it must be addressed to the person who sent the article to be analysed. The magistrates ruled against Mr. Blagg, but the case was eventually dismissed. When the purchase was made by Police-constable Wilton, defendant said he would guarantee it as olive oil. Some few minutes later the defendant told the constable if he wanted the oil, which he said "they called olive oil," for eating, he would not recommend it. Defendant was about to take the oil back when the constable snatched it up off the counter. Superintendent Ford stated that no complaint was made to him that the constable took the bottle away by force. In giving their decision the magistrates expressed their belief that the defendant by his actions did make the constable think it was olive oil.

DR. H. E. ARMSTRONG AND THE TYNE PORT SANITARY AUTHORITY.

DR. CONAN DOYLE in his "Firm of Girdlestone" let in a little light upon some aspects of shipowning. Dr. H. E. Armstrong some time ago commented upon the insanitary character of the inferior merchant vessels, with the result shown in the following extract from his annual report:—

"The Medical Officer of Health, after holding office since 1881, was compelled to resign in October last, having reason to complain of treatment by the Authority that could not be called either just or courteous. The following are the circumstances:—

"In May last he had to attend a deputation to the Local Government Board, and was two days away from home. During his absence, the s.s. *Regulus*, from Dartmouth, was advised with smallpox on board, and on arrival in the Tyne was at once visited. After medical examination the patients were removed to hospital, and the forecabin and contents were properly disinfected. Some infected bedclothes were, however, concealed in another part of the ship, and were taken ashore by a healthy sailor, having escaped the inspector's notice. Three cases of smallpox in Jarrow were alleged to have arisen from this action.

The Authority met to consider the matter without giving the Medical Officer of Health the opportunity to be present, and without hearing him, passed a vote of censure on him and on the Assistant Medical Officer, though neither was to blame for, or could have prevented what had taken place. Both officers protested in vain, and the Authority referred the matter to the Local Government Board, who replied that they found nothing to inquire into. The Medical Officer of Health submitted a written statement clearing himself, and eventually the Authority decided to let the matter drop but did not rescind the vote of censure which by their own action and the comment of the Local Government Board was shewn to have been passed in error. The temper of the Authority appears to have been ruffled by the snub they had got, and some things were said by various members which probably, in cooler moments, would have been left unspoken. One member, however, submitted a motion to a subsequent meeting which, whilst perfectly in order, would, if carried, practically dismiss the Medical Officer of Health, as it required him to reside at the mouth of the river, which, from his position as Medical Officer of Health of Newcastle, he could not do. The Medical Officer being aware that he had, by some comments on the sanitary condition of the inferior classes of merchant ships, roused the wrath of

certain of the ship-owing members (who, with a comical haste if doubtful discretion, put on the cap), and seeing that this section of the Authority with their friends were determined to oust him, thought the most dignified course was to send in his resignation, which was accepted. As they had not, however, expected so early a victory, they had not a successor ready, and the writer consented to continue his services till the end of the year, solely that the work of the port should not be prejudiced.

"Shortly after this the Assistant Medical Officer of Health tendered his resignation which was also accepted.

"The writer is well aware that any outspoken public officer who tries to do his duty must occasionally tread on the toes of men who, having the power to injure him, find the temptation irresistible. He is not the first, and does not expect to be the last, who has so suffered. But there are compensations."

It transpired during the discussion on Dr. Armstrong's resignation, that there were 1,381 ships in a defective sanitary condition out of a total 11,757. We shall be curious to see who will be complaisant enough for this Tyne port insanitary authority.

EXTENSIVE SEIZURE OF TINNED MEAT.

AN UNSAVOURY BUSINESS.

At the Central Criminal Court on Feb. 6, before the Recorder, John Munro and Alexander Munro, on bail, were indicted under the 47th section of the Public Health (London) Act, 1891, for having in their possession tins of meat and soup which were unsound, unwholesome, and unfit for the food of man, and also for having the same in preparation.—Mr. Muir and Mr. Jay prosecuted on behalf of the vestry of the hamlet of Mile-end Old Town; and Mr. A. Gill defended.

The accused, as Palmers, Limited, carried on the business of potted meat manufacturers at 42A, Ocean-street, Mile-end, and on two occasions the neighbours complained to the medical officer of health of the horrible stench arising from their premises. The medical officer visited the premises in July last, when he seized and condemned twenty-seven tins of corned beef, eighty-four tins of potted meat, and nineteen tins of fish, salmon and rabbit. On the second occasion, Oct. 3, he seized thirteen tins of corned beef, two of rabbit, and sixty-one of soup, and on the third occasion he seized forty tins of corned beef, and 180 tins of potted meat. On the third occasion only five good tins of meat were left on the premises.

In defence, it was urged that the defendants purchased the tins of meat referred to; that they intended to retain those which were not good, and which they could not use in their own manufacture.

Mr. Gill said it was against the interests of the defendants to use anything but good articles, as their customers were sure to return them.

Alexander Munro gave evidence, and was severely cross-examined as to the prices paid for the stuff being considerably below the market prices. He admitted that between the second and third visits the tins seized at the third visit were deposited in some adjoining stables, but the horrible stench which arose was due to other causes altogether. Two girls were sent to the stables to open the tins as they were required, but there was no improper reason whatever for this.

The jury found the accused guilty, and Mr. Muir said the prosecution had every reason to believe that this business had been carried on on an extensive scale, as for a considerable time numerous complaints had been received of the intolerable stench arising from the premises, and which could not possibly arise from any legitimate process of manufacture. The medical officer had great difficulty in getting into the premises, and he submitted that it was an exceedingly bad case.

Mr. Gill said that the accused only occupied subordinate positions in the business until July last.

They were each sentenced to six months with hard labour.

DISEASED MEAT.

At Bolton on Feb. 17, a butcher named Alfred Gill, Moor-lane, Bolton, was summoned for preparing the diseased carcase of a cow for sale. The defendant purchased two cows and two calves at Blackrod, on the 17th ult. He drove one of the cows, which was in a diseased condition, in the dark to a slaughter-house, where it was killed and dressed for sale by another butcher, much against the latter's desire. When advised not to proceed with the dressing, the defendant insisted, remarking that he would "stand the racket" if the matter was found out, and that, if the other butcher would not tell, it would never be found out. The condition of the carcase was spoken to by Dr. Barr, medical officer of health, who said the carcase was the worst he had ever seen. The consumption of such flesh would be extremely dangerous to the health of the community.—The Bench inflicted a penalty of £20 and costs, with the alternative of two months' imprisonment. Why they did not imprison without option of fine surprises us, as it doubtless will our readers.

At Oldham, on February 13, John Simpson, butcher, Chadderton-road, was summoned for selling diseased meat. It was shown that the meat seized was a portion of a tubercular carcase, and scientific witnesses testified that the diseased condition of the meat must have been known to the defendant. For the defence, Mr. Jordan suggested ignorance, and urged that Simpson was a very old man. A fine of £40 and costs or three months was imposed. There had been previous convictions.

TINNED SALMON POISONING.

DR. G. DANFORD THOMAS, at the Islington Coroner's Court, on February 17, inquired into the circumstances of the death of Edgar Thomas Everard, aged five, the son of a poulterer, lately residing at 28, Bryan-street, Caledonian-road. On the preceding Monday, it appeared that the deceased's mother obtained a tin of salmon from a neighbouring tradesman, which was opened at the shop, and which, it was subsequently noticed, was destitute of oil. The child's parents ate the salmon without any ill-effects, as did their other children, but the deceased, a delicate and ailing boy, after eating the fish, was seized with diarrhoea and excessive vomiting. This continued intermittently until Thursday, when he died. Dr. W. E. Gilson, 34, Huntingdon-street, Barnsbury, made an autopsy, and found signs of acute inflammation of the stomach, due to some irritant poison. He concluded that the salmon, harmless to others in good health, proved poisonous and fatal in the case of the deceased. Death was undoubtedly the result of gastro-enteritis, caused by ptomaine poisoning following the eating of the salmon. Mr. Everard, who is employed at the Home and Colonial Stores, Islington, said he had sold thousands of tins of salmon, and he did not notice that anything was amiss with the tin in question, save that it was devoid of oil. Occasionally, as a quicker process, the tins were soldered with spirits of lead instead of resin, and his belief was that some of the former might have found its way into the tin, with the result that his son was poisoned. The Coroner said the tins, after the salmon had been boiled in them, were supposed to be hermetically sealed. If they were not air-tight there was generally a perceptible bulging. The jury returned a verdict in accordance with the medical evidence.

WATER AT SPIRIT RATES.

At Durham, on Feb. 12, William Moor was summoned for selling rum 31·83 degrees under proof, at Coxhoe, on January 20th.—Defendant pleaded guilty.—

Mr. Scott Elder stated that he was collecting samples in the neighbourhood of Coxhoe, on the day named, and called at defendant's licensed premises, where he purchased a pint of rum, for which he paid two shillings. He informed the young woman who served him that he was going to have it analysed. He produced the certificate of the county analyst, which showed that the rum was adulterated with 31 per cent. of water, which was 6'83 over what it should have been.—Defendant said he had been in the business 15 months, and this was the first gallon of rum he had made up. His wife, who used to do this, was ill, and he had to make it himself. He was sorry he had not done it the right way.—The Chairman: You did not make a mistake and put too much rum in; it was the other way.—A fine of 5s. and costs was imposed.—Patrick Connolly was summoned for selling whisky which was 37'10 under proof, at Coxhoe, on the same day.—Mr. Scott Elder stated that he called at defendant's house on the day in question, and was supplied by Miss Hargreaves, the daughter-in-law, with a pint of whisky. He had it analysed, and it was found to be 37'10 under proof. Twenty-five was allowed, so that this case was of a more serious nature than the last, as it was 12'10 over. Defendant said he thought he had put the whisky up all right.—The Chairman: This is a more serious case than the last one. We will fine defendant 7s. 6d. and costs.

OPENING OF THE HORFIELD SEWAGE DISPOSAL WORKS, BRISTOL.

THE new sewage disposal works of the Horfield Urban District Council were formally opened in the presence of a large number of visitors on the 10th instant.

The Council being forced by an order of the Bristol County Court Judge to cease polluting a brook, Mr. A. P. I. Cotterell, C.E., of Bristol, was instructed to carry out the best-known and available means of purifying the sewage of the district, and his plans were accordingly submitted to the Local Government Board, who, after due inquiry, approved the scheme, which includes the "International" process of Ferozone and Polarite.

The drainage and outfall works have been completed, and in operation for about two months. The system had therefore received a thorough testing before the official opening.

The sewage is first treated with Ferozone, and finally passed through Polarite filters. The filtered effluent is bright and sparkling, and much satisfaction is expressed with the success of Mr. Cotterell's scheme.

DEATH OF INSPECTOR DUNN, OF BISHOP AUCKLAND.

WE regret to record the death of Mr. Thomas Dunn, Inspector of Weights and Measures, and Food and Drugs, for the Bishop Auckland division of the County of Durham, which took place on Sunday morning last at his residence, Ellerslie House, Bishop Auckland. Mr. Dunn was a prominent Masonic officer, well-known throughout the county of Durham. He was 44 years of age, and a native of the Reeth district in North Yorkshire. He was engaged as schoolmaster for a number of years at Lanchester, a position he relinquished seven or eight years ago in favour of an appointment as Inspector of Weights and Measures, etc. He held an exceptional position as a Freemason, having had a lengthy list of honours conferred upon him. He was Provincial Director of Ceremonies, an office which brought him into close association with the whole of the Masonic Lodges in the county. He was also D.C. of the Provincial Grand Chapter of Royal Arch Masons. In 1889, Mr. Dunn was W.M. of the Marquis of Granby Lodge, whilst he was a joining P.M. of the Tristram Lodge. In 1893 he was

First Principal of the Concord Chapter of Royal Arch Masons, whilst he was a Past Master (1893) of the Dunelm Lodge of Mark Masons. The deceased gentleman was also identified with Oddfellowship, being a Past P.G.M. of the Manchester Unity. Mr. Dunn was held in very high esteem by his large number of acquaintances. He leaves a daughter, his wife's death occurring soon after taking up his residence at Auckland. Deceased took a cold about three weeks ago and was afterwards seized with typhoid, which proved fatal. The funeral took place on the 18th inst., and was largely attended, the Masonic brethren attending in numbers. The County Weights and Measures Department was represented by Mr. B. Scott Elder (Chief Inspector), Mr. Jas. Laidlaw (Inspector for the Chester-le-Street District), Mr. Geo. Wilson and Mr. W. E. Suddes, Assistants to Inspectors, and Mr. Jeckell (Clerk to the Department). The coffin was covered with wreaths, one of which had been sent by the staff of the Weights and Measures Department, bearing the inscription "With deepest sympathy and as a last tribute to the memory of one who had won our affection and esteem."

CORRESPONDENCE.

BORIC ACID IN BUTTER.

To the Editor of FOOD AND SANITATION.

SIR,—I think it is to be deplored that a body of business men such as the trustees of the Cork Butter Market should be found countenancing the drugging of butter, one of our most delicious, popular, and wholesome articles of food. But I find at their last meeting in Cork that a resolution was passed (no doubt in ignorance of its effect) recommending the use of $\frac{1}{2}$ lb. of "preservative" and $\frac{1}{2}$ lb. of salt in the curing of 56 lb. of butter. Now, preservative, it is well known, is simply another name for boric acid, which, I am sorry to say, is becoming largely used in the preservation of various articles which we daily eat and drink, and it is about time that someone should call attention to the danger to the health of delicate persons and young children, if not to the more robust, from continuously consuming food treated with boric acid, under whatever name it may be applied. The law of France prohibits the introduction into food of any matter injurious to health, and boric acid has been declared injurious by the highest public hygienic authorities in that country, and its use has been definitely forbidden by law as a preservative for wine. And I hope something may be done in England to stop this nefarious practice. Surely the British consumer is not going to submit silently to his food being drugged for him, especially as those administering it are interested in giving as large a dose as possible, seeing that its cost is a good deal less than the price of the article into which it is introduced. I understand preservatives are used largely for preventing decay in milk, cream, butter, fish, meat of all kinds, sausages, brawns, game, jellies, jams, and wines. It would be very hard to say, therefore, what amount of boric acid one might not consume during the daily meals. It appears to me that, apart from the questionable policy of recommending an injurious drug, the trustees of the Cork Market are making a great mistake in encouraging the use of preservatives, which will surely be stopped by law some day; their line should rather be to fight against their use, oppose them, and expose them by every fair means, because preservatives have been, and continue to be, the ruin of the Irish butter trade; for without the use of preservatives Australia, New Zealand and other countries could never send us fresh and mild-cured butter, which would stand the voyage and exposure in market on arrival; and we should now be in the enjoyment of that trade, which pastoral and climatic

advantages, geographical position, and rapid transit place us in a better way of doing than any colony or foreign country in the world.—Yours, &c.,
Dublin. JAMES MACKENZIE.

ALBUMIN AND ITS ALLIES.

In a recent lecture Dr. Logan remarked that the importance of albumin and its occurrence in the animal world was only equalled by that of cellulose in the vegetable kingdom, the great distinction between the two lying in the fact that whereas cellulose as a tissue is practically dead, albumin, on the contrary, plays a very active part in the animal tissues generally. The representative albumin upon which most of the experiments were performed, was egg albumin, of which the composition was discussed, and the action of various reagents towards it explained. Plant albumin was not so definite as that of animals, that is, it varied with different plants. Other closely-allied bodies might be mentioned, such as proteids or albuminoids, which, in the case of those termed "albumins," always contained sulphur with phosphorus, and were invariable constituents of the very active parts of animal tissue, such as the nuclei of cells. Blood contains two albumins, fibrinogen and fibrinoplastic substance, which react when the blood is drawn from the body and clot, leaving the clear serum, which gives the same reactions as egg albumin, and which is used in the arts for the same purposes as white of egg. The red colouring matter of the blood is hæmoglobin, which owes its colour to the presence of iron.

The value of foods is mainly judged by the amount of albuminoids they contain, though their absolute nutritive worth must be regarded as dependent on the quantity of readily available or extractable albumins, which varies considerably in animal and vegetable foods. The action of the gastric juice, which may be approximately represented by an acidulated solution of pepsin, is to produce from the albumins submitted to it bodies termed peptones, which are isomeric with albumins but are not coagulated by heat, and belong to the class of substances termed crystalloids, from their power of passing through membranes by osmosis. Albumin, on the contrary, is a colloid body, so that before it can be used by the animal economy for reconstructive purposes, it must be rendered soluble by means of digestion, which may be done not only by pepsin, but by pancreatine, by vegetable diastase, by such ferments as papaine, and by the action of bacteria. The products of its digestion are ultimately peptones, but many intermediate bodies are formed termed albumoses, the first being uncoagulable and not giving the biuret reaction, the second giving the biuret reaction as peptones do, but otherwise similar to a globulin, being precipitated by a saturated solution of sulphate of magnesium. Many of these albumoses are of an extremely poisonous nature when injected into the circulatory system, most serpent poisons belonging to this class, as does also abrin, a toxic albumose from the jequirity seeds. The biuret reaction referred to is given by peptones to which a small amount of cupric sulphate and excess of an alkaline hydrate have been added in the cold, and is the development of a pink colour. Another test for proteids shown by the lecturer was the xanthoproteic, a yellow-brown colour produced by boiling the substance with nitric acid and adding excess of ammonia. A peculiarity of the digestion of egg albumin by means of pepsin and a dilute acid in test-tube experiments was that a point was reached at which peptone ceased to be formed, the pepsin seeming to be inhibited in its work by the quantity of peptone formed. There is an analogy in this to the accumulation of alcohol in alcoholic fermentation, when it reaches the proportion of 20 per cent. by weight, preventing the further action of the yeast. The peptones, as soon as they are formed in the stomach, pass by osmosis into the cells forming the walls of that organ, in some of which the peptone becomes regenerated, and appears again as an albumin.

The action of pepsin on gelatin, or the cartilaginous portions of animal food, is to give peptones also, but these

differ from those of albumins, in being useless for the building up of new tissues. The effect of cooking foods was touched upon by the lecturer, who held the view that, broadly speaking, cooking made most foods less easily digested, but that it served one good purpose—that of killing the spores or bacteria, by which such diseases as tuberculosis are propagated. In milk we have a typical albumin, the casein, which was an alkaline albumin not precipitated by boiling, but readily coagulated by the addition of acids or of the rennet ferment. Milk may not be exactly improved by boiling, except so far as sterilisation is concerned.

DANISH BACON.

A CORRESPONDENT describes in the *Grocer* how this trade is organised. "At the half-yearly meeting of the Great Eastern Railway Company on Tuesday, Lord Claud Hamilton remarked that there was a large field in the Eastern Counties, especially Norfolk, for improvement in the manufacture both of butter and bacon, and that 'it was a reproach to them that they did not send to the London market as good butter and bacon as come here from Denmark.' Much has been already written about Danish butter, but the subject of Danish bacon is one about which little or nothing has been said in England, though it deserves the attention of those who are considering what our own farmers should do to help themselves. Briefly stated, the system adopted in Denmark in respect to bacon manufacture is this:—The farmers of a certain district form among themselves a guarantee fund of, say, £4,000, each putting down his name for the sum he is prepared to risk, and on the strength of this guarantee the bank advances them the £4,000, or such other sum as may be required, for the construction of a bacon-curing factory for the district in question. The bank also advances a further £500 for the payment of the preliminary working expenses. The factory is then constructed, replete with all the latest methods in machinery, etc., and inclusive of large storage for the ice which forms so important an item in the work. In some instances a factory will have room for 50,000 tons of ice, which is gathered in during the winter at a cost only of the requisite labour, and is so stored that it lasts until the next winter. The factory is put in charge of a special staff, and the farmers devote their own energies solely to pig-raising, for which purpose they have an excellent stock of animals, while swine fever seems to be practically unknown. The farmers sell their pigs to the factory at full market rates, being paid at first out of the £500 already referred to. At the factory the pigs are killed and turned into either bacon or 'mess pork' for ships, and these products are in due course sent to London, where they are sold, and the London agent sends to Denmark a cheque for the amount due. The bank through which the whole thing is worked deducts its charges, which may come to 8 per cent., and the remainder stands to the credit of the factory for the payment of expenses and for eventual division among the farmers, in addition to the market rates they have already been paid for their pigs. There are now about twenty of these factories in Denmark, and, generally speaking, they have been established without any actual call being made on the guarantee funds. Altogether these factories will sometimes deal with 10,000 pigs in one week, and the total output has now attained such proportions that our imports of bacon from Denmark alone amounted last year to over 1,000,000 cwts."

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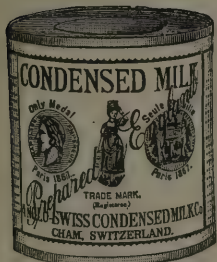
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Food and Sanitation.

SATURDAY, FEBRUARY 29TH, 1896.

"THE LANCET" ON ITS DEFENCE.

SOMEWHAT tardily, and, our readers will observe, very feebly, the *Lancet* in its last issue endeavours to answer our exposure made some three years ago and repeated in our issue of December 14 last of Valentine's Meat Juice and the worthlessness of the *Lancet's* eulogy

of that article. As the *Lancet's* defence is a model of patronising superiority, we think our readers should peruse it before we proceed to analyse it. The *Lancet* says:—

"THE COMPARATIVE NUTRIENT VALUE OF MEAT PREPARATIONS.

"Some correspondents have directed our attention to an article which appeared in FOOD AND SANITATION of Dec. 14, 1895, a journal usually bristling with sensational headings, in which our analysis of a certain meat preparation is impugned. The article is drawn up in the 'look on that and on this side of the picture' style. Thus, Valentine's Meat Juice is stated to be merely 'an ordinary meat extract diluted with water, but as far as nutrient value goes the water in which dinner-plates are washed would be about as valuable.' Bovril, on the other hand, is spoken of as 'a real invalid meat food' in which more has been achieved than the editor of FOOD AND SANITATION thought was possible, and on this account we are to have at once a Ministry of Public Health. We make no objection to the laudatory remarks about Bovril, as we have reason to believe that of its kind it is an excellent nutrient, but it is of quite a different order from a meat juice that is expressed in the cold; indeed, the two preparations are not comparable. A meat juice expressed in the cold contains the soluble nutrient substances of beef, amongst them being albumin, certain proteids, and hæmoglobin. When such a preparation is heated, therefore, the albumin coagulates, while the clear solution also contains other proteids of nourishing value. Gelatin does not enter into the composition of meat juice expressed in the cold to any appreciable extent, since treatment with hot water is required to extract it. It is present, therefore, to a much larger extent in ordinary extracts. We care not whose preparation is under consideration; so long as it is meat juice expressed in the cold it must *a priori* be a powerful nutrient, depending, of course, upon its degree of concentration. To take one of the inevitable constituents, albumin is able by itself to support the vital processes, and, as Dr. Burney Yeo observes, is the only alimentary substance that can do so. According to a recent analysis of Valentine's meat juice it proved to contain 53.30 per cent. of nitrogenous substances in solution, of which exactly a half consisted of matters (proteids, etc.) precipitated by alcohol, and the rest of meat extractives, crystalline principles, etc. Of the matters thus precipitated 1.5 per cent. is pure beef albumin, which is coagulated also on heating the juice. The diluted juice, viewed by the spectroscope, shows the spectrum of hæmoglobin very distinctly. The sample was purchased at the Civil Service Stores, Bedford-street, Strand, by ourselves. Our opinion of this preparation is therefore unaltered, and we are satisfied that what was stated in the *Lancet* of December 28, 1878—namely, that this preparation was valuable both as a stimulant and food—is perfectly true, and justified by analysis, and, what is better, by clinical experience. We challenge FOOD AND SANITATION to appoint, with our approval, an analyst of well-known repute to undertake an independent analysis and publish it, and place it side by side with the one upon which is based the remark that the wash of dinner-plates would be almost as valuable as the meat preparation to which he alludes. We have not the least doubt that this remark would not be thereby substantiated. We should not have referred to the matter at all again but that copies of this article have been distributed broadcast amongst the medical profession, to whom it is a matter of vital importance, of course, to know whether, especially in the treatment of invalids, such preparations may be relied upon. Apart altogether from chemical analysis, our readers know from the evidence of experience that meat juices expressed in the cold are of eminent service in the sick and invalid dietary. To condemn such preparations displays a woeful and wilful want of knowledge of common physiological requirements. Oddly enough, in an article on infants' foods in the same issue of this 'public analytical journal,' the *Lancet* is quoted as affording favourable testimony to the merits of a certain malted food which, in the opinion of the editor of FOOD AND SANITATION, is ideal, and not open to defects which he finds in numerous others which are mentioned."

Unfortunately for the *Lancet* it is not true that Valentine's Meat Juice is valuable, both as a stimulant and food. Our first analysis of the preparation, made in January, 1893, by a public analyst of eminence, who is a past president of the Society of Public Analysts,

disclosed the following as the composition of Valentine's Meat Juice:—

Water	-	-	-	-	-	55.24
Ether Extract	-	-	-	-	-	4.80
Gelatine and Albuminoids	-	-	-	-	-	0.93
Peptone	-	-	-	-	-	1.55
Creatine and Meat Extractives	-	-	-	-	-	18.27
Salt	-	-	-	-	-	2.62
Other Mineral matters	-	-	-	-	-	8.51
Non-Nitrogenous Extractives	-	-	-	-	-	8.08
						100.00

To make assurance doubly sure, we had the preparation again analysed in May, 1895, by a past president of the Society of Public Analysts, and the result showed

Gelatine	-	-	-	-	-	0.62
Peptone	-	-	-	-	-	2.93
Albumen	-	-	-	-	-	0.10

i.e., the actual amount of albumen yielded was only a tenth of one per cent. In calling this article "valuable both as stimulant and food," the *Lancet* is egregiously misleading it readers. But we need not rely solely on our own analyses to prove how woeful and wilful is the *Lancet's* want of knowledge of the subject.

Mr. R. H. Chittenden, professor of physiological chemistry, Yale University, analysed Valentine's Meat Juice in May, 1891, and gave the results in a paper read before the Philadelphia County Medical Association, as follows:—

VALENTINE'S MEAT JUICE.						
Water (at 110° c)	-	-	-	-	-	60.31
Solid matter „	-	-	-	-	-	39.69
Inorganic constituents	-	-	-	-	-	11.30
Phosphoric acid	-	-	-	-	-	4.00
Fat (ether extractives)	-	-	-	-	-	0.78
Soluble in 80 per cent. alcohol	-	-	-	-	-	29.15
TOTAL NITROGEN	-	-	-	-	-	2.68
Soluble Albumen coagulable by heat	-	-	-	-	-	0.55
TOTAL PROTEID MATTER AVAILABLE AS NUTRIMENT	-	-	-	-	-	0.55

The above results corroborate our exposure of the *Lancet*, and contradict *in toto* the *Lancet's* defence. It is untrue to say that a substance containing 0.10 only of albumen, as our last analysis revealed, or 0.55 as that of Professor Chittenden disclosed, is "valuable as a food;" and it is fortunate for the medical profession that the *Lancet's* circulation amongst medical men is somewhat limited, for an examination of the *Lancet's* analyses shows that it spreads some very dangerous delusions under the guise of scientific information. As to appointing an analyst to make further investigation, the proofs above given render any further investigation on our part unnecessary. We have given our results and those of Professor Chittenden, and both show the *Lancet* to be woefully and wilfully ignorant and misleading. The *Lancet*, if it be so disposed, can take the trouble to ask any of the most noted analysts to make an independent analysis for it, but the *Lancet* would find the results tally with those we published, and utterly disprove its statements of February 22. We cannot coincide with the *Lancet's* belief that there is anything odd in accepting its testimony on another article. There is, as Proctor pointed out, a doctrine of chances, and it would be odd indeed if every *Lancet* analysis were misleading and inaccurate. Our contemporary, in stating that it is odd we should regard one of its analyses favourably, makes a grave reflection upon itself. When a *Lancet* analysis is worthy of credence, we do not mind calling attention to it, because we believe the true mission of a newspaper is to make the truth known. Rubbish like the *Lancet's* assertion that "a recent analysis of Valentine's Meat Juice proved it to contain 53.30 per cent. of nitrogenous substances,

in solution of which exactly a half consisted of matters (proteids, etc.) precipitated by alcohol, and the rest of meat extractives, crystalline principles, etc." may deceive the uninitiated, but the *Lancet's* woeful and wilful ignorance needs no further proof than the words it uses in its own defence, later on. Out of its own mouth therefore shall come its irrefutable condemnation.

"Albumin," says the *Lancet*, "is able by itself to support the vital processes, and, as Dr. Burney Yeo observes, is the only alimentary substance that can do so." Six lines lower down, the *Lancet* says that 1.5 per cent. of Valentine's Meat Juice is pure beef albumin. It is impertinent for even the *Lancet* to suggest that a substance containing, on the *Lancet's* own showing, only 1.5 per cent. of albumin, is valuable as a food. The percentage of nutrient is too near akin to that of the truth in the *Lancet's* statement—for it is conspicuous by its absence. As regards stimulating power, the substance has scarcely that of healthy urine, which, in chemical composition, has many features in common with it. The Guacho who requires a stimulant drinks Nature's refuse fluid: the *Lancet* recommends the profession to humbug patients into paying 3s. for two ounces of a substance not very unlike, chemically, to one which requires the processes of the International Water and Sewage Purification Company. Respecting the *Lancet's* remark about our "bristling, sensational headlines, we would respectfully submit that our headlines are over truthful writing.

We commiserate our contemporary on its incapacity to even produce a bristling, sensational headline, and, in our largeness of heart, do not mind giving it our assistance. On page 504 of its current issue appears Chapter VIII. of a biography of Thomas Wakley, the founder of the *Lancet*. In case the *Lancet* wants a sensational headline for Chapter IX., we can spare it one—viz.:—

"AN EARLY ESSAY IN BLACKMAIL AND THE RESULT." If it requires the facts for the said article, the firm of Joseph Travers and Sons, Limited, 119, Cannon-street, can supply them. If the *Lancet* be diffident about applying for the facts, the Editor of FOOD AND SANITATION could write the chapter himself, as well as supply the bristling, sensational headline, and, in the interests of true biography, he is willing to write it gratis if the *Lancet* will publish it. But the *Lancet's* ideas about truth in biography may be like its analyses, and disclose only so much as it is convenient should be known.

THE AMERICAN OIL GANG'S SWINDLE.

In another column we deal with the *Lancet* and an American meat juice, and a few weeks ago we made a few remarks about the *Lancet* and its wretched commission on lamps and mineral oils. The *Lancet* reported that 73 degrees was safe. The American *Paint, Oil, and Drug Review*, of February 12, has the effrontery to point out that in Illinois oil must have a 150 degrees flash point, *i.e.*, a little over twice the degree of safety the *Lancet* recommends, and which causes a loss of, roughly speaking, a life per day.

This is what the *Paint, Oil, and Drug Review* says:—
 "An interesting situation in South Dakota brings the present subject to mind. There the people are dissatisfied with the quality of oil marketed in that commonwealth, and are demanding relief at the hands of the state oil inspector. That official declares many of the complaints against the illuminant sold to be well founded, but under the law he is vested with authority to make only such tests as pertain to the safety of the oil, and not authorised to test its lighting qualities, or to reject or approve on its merits a single barrel. If the oil passes the safety test, is reasonably free from gases and liability to explosion, it is approved, and the inspector urges that purchasers make their protests to the oil companies and not to him. It is stated by agents of the companies that more barrels of oil have been rejected in South Dakota, in proportion to the number handled, than

in any of the north-western states, proving the system of inspection there a rigid one. But there is an opposite view which ridicules the idea that the state inspection machinery is absolutely powerless to work some remedy in behalf of consumers, who assert that the oil is steadily getting worse, notwithstanding the employment of special officials who ought to look after their interests and protect them from impositions.

"The position of the state oil inspector above outlined is correct, and what applies to South Dakota applies with equal force to Illinois and other states. *Before oil is sold in this commonwealth it must muster a 150 degrees test.*"

But as 40 per cent. of the oil distilled is too rubbishy and dangerous to be allowed sale in the United States, it pays the oil gang to take any steps to secure its sale in the United Kingdom.

CARBON DIOXIDE AS A SUBSTITUTE FOR ICE.

AFTER five years of patient experiment, E. F. Osborne, a thermic engineer, has devised a means by which a well-known but hitherto idle agency may be put to commercial use. The raw materials required are soft coal and limestone. The products are carbon dioxide, commercial lime, carbonate of ammonia, and coal tar. The coal is supplied to retorts and subjected to destructive distillation in nearly the same manner as in ordinary gas-works; the tar and ammoniacal liquor are separated, the former being sold in its crude form and the latter distilled and converted into carbonate of ammonia, packed and sold. The coke resulting from the coal distilled is converted into a semi-water gas, which is used to distil or calcine the limestone. The lime produced is of the best quality, and is sold on the open market either in bulk or by the barrel.

The dioxide is purified, cooled, compressed, and liquefied in the same way as is done in ordinary manufacturing where this substance is produced for commercial purposes. The liquid dioxide will then pass by its own pressure into the main distributing pipe in the street, thence by service pipe to the cold storage warehouse, refrigerator, ice-cream freezer, champagne cooler, or other apparatus located on the premises of the various consumers on the line. At the curb-stone will be a service cock; just inside of the consumer's premises is an automatic valve which cuts off the quantity in case of a break or careless management of the apparatus on the consumer's premises. One ton of good soft coal and three and one-half tons of limestone will produce a little more than 3,500 pounds of lime, 13,000 pounds of carbon dioxide, six or seven gallons of coal tar, and forty to fifty pounds of ammonia. In addition to producing carbon dioxide gas, a first-class illuminating and fuel gas will be obtained.

To preserve meats without refrigerating, the carbon dioxide is blown in the meat in a kind of spray, and has no deleterious effect on any food product except milk, which it sours. In refrigerating-car service the gas would be carried in tanks under the cars, the tanks being filled at charging stations located 500 to 1,000 miles apart. Carbon dioxide as a refrigerating medium is not a new discovery. It is now in practical use, but the expense of manufacturing it is very great. It is used for refrigerating in saloons and hotels, but it costs from 8 to 18 cents a pound, and can never be extensively employed so long as such prices prevail. Under the old system it was made from certain stones imported from Italy and Germany. Under the new system it is made from limestone and soft coal, and could be sold in competition with ice at 75 cents a ton. As ice sells at 5 dols. a ton, the saving will be sufficient to drive ice out of the field. The efficacy of this gas in extinguishing fire has also been well known, but its cost made it unavailable.—*Public Opinion.*

FRENCH BUTTER AND THE ENGLISH MARKET.

The Paris correspondent of *The Standard* describes a

lively debate which recently took place in the French Chamber of Deputies on a Bill to prevent the adulteration of butter. Members criticised and denounced the quality of French butter with a frankness that was delightful to the foreigner. It was in vain that the Minister for Agriculture hinted that such hard things had better be left unsaid, particularly if they were true. Owing to the consumption of margarine, M. de Saint Quentin declared that the amount of butter consumed in Paris remained at a standstill, while the member for Nantes explained, without any beating about the bush, that if it was true that the export of French butter to England had dropped by one half of the quantity formerly sent out, the reason was that French butter was not so good as formerly. To this the Minister for Agriculture demurred, adding vaguely that the fact was due to other causes. M. René Brice, a member for the butter-producing land of Brittany, defended the drastic provisions of the Bill against margarine. Butter was going through a crisis. It was the most important industry in France next to that of wheat-growing, and its existence was threatened. Denmark and Sweden had taken energetic steps to defend butter. They had in consequence got the whole benefit of the increased consumption of butter in England, while France on that market alone had lost four to seven million pounds a year. It is a thing to be desired that our farmers at home should awaken to these facts and make some serious attempt to compete with countries abroad which are gradually robbing them of their trade in this important article.

THE EXAMINATION OF DISINFECTANTS.

By M. H. KAUFFMAN, B.S.

THERE are a number of disinfectants on the market of more or less value, and it is the object of this paper to give the dealer and consumer some method of determining the relative value of these various products. Infections are caused by various kinds of bacteria, but all these bacteria do not thrive under the same conditions. A substance may form an excellent medium for the growth of one kind of bacteria, while it may be positively fatal to other kinds. So in determining the value of a disinfectant it is necessary to determine its effect upon specific forms of bacteria.

Although the chemical constitution and strength of a disinfectant can be determined by chemical means, it is necessary to resort to a bacteriological examination in order to be certain of its value as a disinfectant. A bacteriological examination may be conducted as follows:—

A series of test tubes are filled with solutions of disinfectants of different degrees of strength, and in each of them is placed a silk thread impregnated with some specific form of bacteria (e.g., bacterium coli). At the end of definite intervals of time the threads are removed, washed with sterilised water and placed in a culture medium of gelatine or agar. The culture tubes, containing the culture medium, are then placed in a sterilised chamber until the bacteria shall have had time to develop. If the solutions are strong enough and if sufficient time be allowed for the action of the disinfectants, no colonies of bacteria will be found, but if on the other hand the solutions were too weak, or if the time for the action of the disinfectant be too short, numerous colonies of bacteria will be found. In every case it will be found that in a certain strength of solution the bacteria will thrive, while in a somewhat stronger solution they will be killed. Thus, a solution of one part of thymol in three thousand of water will prevent alcoholic fermentation, but if the solution be diluted to one in thirty-five hundred the fermentation will proceed. A solution of one part salicylic acid in one thousand parts of water will prevent fermentation, but if diluted to one in twelve hundred, fermentation will take place. A solution of one part thymol in three

thousand of water is the weakest solution of that antiseptic that will prevent fermentation, while a solution of one part of salicylic acid in one thousand of water is the equivalent strength of that solution for hindering fermentation.

Therefore it may be said that thymol has three times the disinfecting power of salicylic acid. In a similar way all antiseptics may be compared. The following table gives the minimum strength of some well known antiseptics that will prevent alcoholic fermentation:

Antiseptic.	Weakest concentration to prevent fermentation.
Corrosive sublimate - - -	1.20000
Potassium permanganate - - -	1.10000
Copper sulphate (blue vitriol) - - -	1.4000
Bromin - - - - -	1.3000
Thymol - - - - -	1.3000
Benzoic acid- - - - -	1.2000
Salicylic acid - - - - -	1.1000
Quinine - - - - -	1.400
Carbolic acid - - - - -	1.200
Sulphuric acid - - - - -	1.100
Resorcin - - - - -	1.100
Pyrogallol - - - - -	1.50
Boric acid - - - - -	1.25
Chloral hydrate - - - - -	1.25

—*Paint, Oil and Drug Review.*

PUBLIC ANALYST'S REPORT TO HACKNEY VESTRY.

THE samples submitted during the quarter ending December 31st, 1895, under the Food and Drugs Act, numbered 53. Of these 3 (butters) were from a private purchaser, and the remainder from the Inspector appointed by the Vestry.

The articles analysed were as follows:—Milk 25, butter 7, mustard 5, jam and coffee 4 each, white pepper 3, lard, margarine, cocoa, arrowroot, and ground ginger 1 each. The adulterated samples comprised 10 milks, 3 butters, 1 lard, and 1 margarine. All the milks were very poor in quality, but those reported against exceedingly so. In two cases fines of £3 and £2 were inflicted, but each of the remaining cases where a prosecution was instituted escaped upon payment of costs.

Sample 321 was obtained at the request of the vendor of 308 to prove that the milk was sold as purchased, and as the previous analysis was more than confirmed, the magistrate dismissed the case on payment of costs.

The slight increase in the price of butter at the close of the year was probably the cause of three butters being heavily adulterated with foreign fat, but in regard to No. 324 the Magistrate held that as the butter was served in a paper marked margarine, the purchaser was not prejudiced, and dismissed the summons. Two of the three samples of butter purchased privately were heavily adulterated, but although proceedings were instituted no information has been forwarded respecting results.

Although some of the mustards were rather poor in quality, they could not be certified as adulterated, and the other articles were of good average quality.

LEO TAYLOR, F.I.C., etc.,

Public Analyst's Laboratory, Public Analyst.
31, Moorgate-st., E.C.

ADULTERATION IN CHESTER.

THE report of Mr. J. Carter Bell, the public analyst appointed for the County of Chester, upon the articles analysed by him under the above Act, during the quarter ending the 31st December, 1895, says:—

"During the quarter ending December 31st, 1895, I have analysed 236 samples, consisting of 70 butters, 50 milks, 18 spirits, 11 cheese, 20 sundries, and 67 waters. Of these 16 were adulterated, namely, 10 butters, 3 spirits, 2 milks, and 1 ginger. The butters were

adulterated with from 84 to 91 per cent. of foreign fat. The spirits contained 6, 12, and 17 per cent. of water in excess of the quantity allowed by the Act of Parliament. The milks were adulterated with 10 and 20 per cent. of water. The former was from the Hyde Division, and the latter from Nantwich. The ginger was adulterated with 5 per cent. of sandy matter.

"Last quarter I called attention to the absence of any adulterated samples of butter, and in this quarter it has risen from nothing to 10; this is the same number for the corresponding quarter of last year, but the percentage is greater in this, than for the quarter in 1894.

"Total number of samples analysed during the quarter, 236."

ADULTERATION IN BIRMINGHAM.

AT Birmingham, on February 21, John Bristoll, of 84, Cox-street West, Balsall Heath, wholesale egg and butter merchant, was summoned under the Margarine Act for selling, on January 16, 10½lbs. of margarine, which was not properly labelled as required by the Act.—The summons was taken out by Mr. Jones, inspector under the Food and Drugs Act.—Mr. Hiley (assistant solicitor to the Town Clerk) appeared for the prosecution; and Mr. Tanner for the defence.—Mr. Hiley stated that defendant was a wholesale dealer, whose practice had been to supply smaller dealers about the town. On January 16, he sent out on a cart a parcel wrapped up in white paper, bearing as the only inscription "10½lbs." The contents were sold as butter at 11d. per pound to Mr. Dudley, a shopkeeper, of 27, Irving-street (for whom Mr. F. Hooper appeared). On the same day, an inspector called, and on his asking for a pound of butter was supplied from this parcel. On analysis, the material proved to have no butter in its composition at all. The defendant and his servants, Mr. Hiley added, seemed to carry on their business in a very adroit way. This stuff was sold as butter, and appeared in the invoices as butter, but no warranty was given with it such as would justify a prosecution under the Food and Drugs Act. The prosecution, therefore, was obliged to be under the Margarine Act, under which, for selling margarine not properly labelled, the penalty was one not exceeding £20.—Evidence was given of the sale of the butter and the taking of the sample, and the invoice, in which 10½lbs. of butter was charged for, was produced.—Defendant said he had been in business for 24 years, and had had no complaint from the authorities, though about ten samples had been taken from him. He sent out stock in three carts every day. The men had to account for what was sold. The majority of his customers did not know him and were unknown to him.—The magistrates remarked that this was a strange way of doing business.—Mr. Tanner said that it was common in the egg and butter trade.—Mr. Fisher: Then, if a man left you he could take your customers to someone else.—Defendant: Yes, that is what we have to put up with.—Defendant stated that he packed the butter and margarine sent out in the cart. Sometimes, however, goods came back in the cart unsold, and were sent out again next morning, and were rewrapped without his knowledge. The butter was wrapped in plain paper, and the margarine was labelled. Paper stamped "Margarine" was given to the men to use when a parcel was broken.—The man in charge of the cart said that he was under the impression that he was supplying butter. There was 7lb. in one parcel, and he made the quantity up from another. The butter and the margarine were kept in separate boxes in the cart.—Mr. Fisher said that the Bench were convinced that there had been an offence under the Act. They were determined to put a stop to the public being so grossly deceived. *They were constantly having shopkeepers fined through their neglect to obtain a warranty from the wholesale dealer. Here they had a wholesale dealer who did not hesitate to sell to small shopkeepers for cash margarine for butter. If the fault had been the man's, why did not the defendant dismiss him? It was one of the grossest frauds on the public they had had for a long time. In such cases small fines were of no effect, and the magistrates must inflict such a penalty as would be a caution to all concerned, and especially to the wholesale dealers. The penalty would be a fine of £15 and costs, or a month's imprisonment in default.—The summons against Dudley was withdrawn.*

Commenting on this case the *Birmingham Daily Post* says:—

"The wholesome fine of £15 and costs, with the alternative of a month's imprisonment, will no doubt induce a

certain butter and egg merchant at Balsall Heath to take more precautions than he has hitherto thought necessary to let his customers know whether they are buying butter or margarine. It is really astonishing, in the face of so many fines and penalties imposed, that dealers, wholesale or retail, should continue to run the risk of conviction. To say nothing of the immediate money cost, there must, one would think, be a consequent loss of trade, sufficient to bring the virtue of honesty home to the dullest comprehension. Yet the three convictions at the Birmingham Police-court, yesterday, afford the public no guarantee that three other convictions may not have to be pressed for against other dealers in a week's time. Is it that the profit so unfairly got on the misrepresented article is so great that, in spite of fines, it pays to continue the imposition on the public? If so, the justices may have to consider the propriety of raising the penalty to the maximum point allowed by the statute. In the Balsall Heath case the defendant was a wholesale dealer, and his sales usually being in bulk the margin of profit must have been all the greater. Usually the fine falls on small retailers, with whom there is sometimes room for sympathy, where they have been in turn imposed on by the wholesale dealers of whom they obtained the goods. It is satisfactory, therefore, to find that in this case a wholesale dealer has been brought to justice. Retailers cannot be too often reminded that they should in all cases insist on a warranty as to the genuineness of the goods delivered to them; this warranty giving them a claim against the wholesale man should the goods prove adulterated, or not according to representation. We are not quite sure that the public are always entitled to much sympathy, where they try to persuade themselves they are buying fresh butter at a price below what any honest dealer would be obliged to charge for such a commodity. If in the rush for cheapness they sometimes get cheated, they have, to some extent, themselves to blame, though that fact does not in the least exculpate the cheater, nor make him less deserving of punishment. With regard to margarine, there ought to be no inducement, beyond that of price, to misrepresent it. If of good quality in itself, margarine is a wholesome substitute for butter, and may be sold at a price within the means of the poor; and dealers would do themselves and their customers a better turn by selling the best margarine at a fair price as margarine than in attempting to pass it off as an inferior butter, which it could only be at the price charged. But the one thing they must do is to let the public know what it is they are buying, and those who attempt to palm off a substitute as the real article cannot be surprised if honest folk class them with rogues and pick-pockets."

Arthur Hayne, of 273, High-street, Harborne, was fined £5 and costs for exposing margarine for sale without a proper label.—Edward Bagshaw, of Muntz-street, Small Heath, £3 and costs for selling adulterated butter, and £3 and costs for selling as coffee a mixture containing chicory.—James Drew, of Muntz-street, Small Heath, was fined 20s. and costs for selling adulterated butter, and ordered to pay costs of a summons for selling adulterated coffee.—Robert Freeman, of Little Green-lane, Small Heath, for selling adulterated coffee was fined £5 and costs.

RAILWAY REFRESHMENT DRINKS.

At Westbury, the Frome United Breweries' Company were charged that on January 20 they sold, at the Westbury Railway Station Refreshment Room, to Frank Beardsley, one of the inspectors under the Food and Drugs Act for the County of Wilts, a quantity of whisky diluted to the extent of 42 per cent., being 17 per cent. more than was allowable by the Act. Frank Beardsley said that on the day in question he went to the refreshment room at the railway station, and asked for three-quarters of a pint of whisky, for which he paid 3s. He sent a portion of it to the County Analyst, who had certified that it was diluted 17 per cent. beyond the 25 per cent. allowed by the Act. Mr. P. W. Cruttwell (who appeared for the defendant company) pleaded guilty, saying that they were legally guilty, but not morally. He should bring evidence to show that the defendant company were brewers pure and simple, and that when they required spirits, as they did in the case of the railway refreshment room at Westbury, of which they were the lessees, it was supplied direct by Messrs. Mansfield and Bailey, and did not go through their hands at all. He did not say that as an excuse, but simply in mitigation and explanation. How the whisky had been lessened in standard they did not know. It was a perfect mystery. They would take care in future, by periodical analysis, that a repetition of the offence would be impossible. Mr. Collins (secretary to the company) gave evidence,

bearing out Mr. Cruttwell's statement. In cross-examination by Mr. Beardsley, he said that they had not, as they were empowered to do by the Act, taken out a warranty in order to relieve themselves of any liability, neither had he the permit with him which was always supplied with the spirits. Mr. Cruttwell wanted to call the manager of Messrs. Mansfield and Bailey, but the Bench decided not to hear him. In imposing a fine of £5, together with £1 costs, the Chairman said the larger and more important the people were, the more serious must be the remedy. The public certainly required protection, especially in such places as railway refreshment rooms, where people went in hastily and partook of their drinks without dwelling on them as they did in other places.

MARGARINE PROSECUTION AT BELFAST.

In the Belfast Summons Court on Feb. 18, John Bond, grocer, carrying on business in Sandy-row, was summoned by David M'Master, inspector, for having sold margarine as butter, under the Food and Drugs Act. The defendant also was prosecuted under the Margarine Act for having given margarine in a plain wrapper, not labelled "Margarine," and for having exposed margarine for sale without a label.—An assistant named Harrison was summoned by the defendant for having sold the margarine.—Mr. Lewis prosecuted, and Mr. M'Erlean defended.—The Inspector said that on January 11, at about nine o'clock, he sent a Mrs. M'Chesney into Mr. Bond's shop. He stood on the other side of the street, and afterwards entered the shop, when Mrs. M'Chesney had then certain parcels in her apron, and he took a parcel of butter from her and went forward to the counter. It was in a plain wrapper, and witness said to a boy named Harrison that he had sent the woman in to buy a pound of butter for the purpose of analysis. The assistant did not speak. Mr. Bond then came forward and said, "What is it?" He explained the thing to the defendant, who said, "All right." While dividing and sealing up the samples of the "butter," Mr. Bond said to the young man, "What did the woman ask for?" The boy said a woman had asked for three-quarters of a pound of 8d. margarine, and he gave it to her. Mr. Bond then asked him what he thought of that, and witness showed him the plain wrapper, and weighed it for him, which showed that it was a good pound, and that it could not have been for three-quarters of a pound.—Mr. Hodder: I suppose you admit this was margarine?—Mr. M'Erlean: Yes, we admit it was margarine, and that margarine was purchased.—Cross-examination continued: He noticed on a corner in the shop a quantity of yellow stuff resembling butter. There was no margarine label on the stuff, but a label marked 11d. He had been in the shop before, and had seen this stuff in the same place without any margarine label.—Cross-examined by Mr. M'Erlean: The person he sent into the shop was in his employment.—Mrs. M'Chesney said that, acting on directions from last witness, she entered the defendant's premises and bought a quarter pound of tea, two pounds of sugar, a quarter stone of wheaten meal, and a pound of butter. She was attended by Mr. Bond himself, but the boy gave her the meal. The butter was taken from an opening in the countere where there was a large lump, the only label on which was, one marked 11d. He took it out and cut it right across. On walking into the middle of the shop Mr. M'Master came in. She had bought butter in the same place before at 11d., and it had been taken from the lump on the counter.—This was the case for the prosecution.—Mr. M'Erlean for the defence said that that was the first time his client was personally aware he himself was charged with the giving of the margarine. Mr. Bond had never sold margarine for butter, and he had summoned the assistant for giving out the margarine.—Mr. Hodder remarked that that prosecution would be under the Margarine Act, and would be no defence under the Food and Drugs Act.—Mr. Bond was then examined, and said that until that day he did not know he was charged with having sold the margarine. Mr. M'Master had come in and spoke to his assistant about the matter, accusing him of selling the contents of a parcel for butter. Harrison said he did not, and that the customer had purchased margarine at 8d. and had got it. He had no recollection of having given the woman any goods. To Mr. Lewis: They sold butter at 1s. 2d., and it was kept under the counter. He swore positively that there was a margarine label on the margarine on the counter.—The summons against the assistant was withdrawn.—The defendant was convicted for having sold margarine as butter, and was fined £5 and costs, this decision governing the other cases.

MEAT.

At Clerkenwell, on February 22, John Spencer, of Worthington, Leicestershire, was summoned by Geo. Timothy Billing, Sanitary Inspector of the Holborn Board of Works, "for that, on Jan. 11, he being the person to whom the same belonged, had deposited for the purpose of sale, at No. 111, Charterhouse-street, three-quarters of beef intended for the food of man which were unsound, diseased, unwholesome, and unfit for the food of man."—Evidence was given by the sanitary officer and the medical officer as to the seizure and condition of the beef.—Defendant denied that the meat was bad, and said it was part of a carcase of a cow which had broken its neck. He purchased it from a farmer and sent it up to London.—Mr. Horace Smith fined the defendant £15.

POTTED MEAT POISONING.

BETWEEN two or three hundred persons have been suffering in Mansfield, Pleasley Vale, Bolsover, and Mansfield Woodhouse during the last few days, as the result, it is alleged, of having eaten potted meat. The symptoms have been such as follow poisoning, and great alarm has been felt in consequence. At one factory in Mansfield many of the hands have been off ill, and the symptoms of the sufferers in nearly every case have been vomiting, sickness, and diarrhoea. Several of the persons affected are, or have been, in a serious condition, but the medical men do not anticipate fatal consequences.

ADULTERATION IN MIDDLESEX.

BRIDGE v. SALE.

At Wood Green, on February 21, the above case came on for hearing, the defendant being charged with selling butter adulterated with 60 per cent. of foreign fat.—Mr. Bridge, the inspector, appeared for the Middlesex County Council, the defendant being represented by Mr. Percell, barrister, instructed by Mr. John Avery, solicitor.—Mr. Bridge stated that he purchased the butter on January 29, and sent the article to the County Analyst the same day by his assistant. The butter was taken from a shelf at the back of the counter, and was wrapped in plain paper; he put in the analyst's certificate, which stated that it contained 60 per cent. of foreign fat.—Alfred Cooper, manager for Miss Sale, said that he sold the butter to Mr. Bridge, and that he in fact purchased the article at the wholesale dealers. He packed the butter into a tub; the tub held three or four qualities of butter. The butter in the tub was divided into four separate parcels, with a label between containing the words "Pure Butter, Warranted." He paid the price of pure butter, and received the warranty or invoice afterwards. He could not say which paper referred to the butter now in question.—The Bench held that the warranty did not comply with the requirements of the section, and fined the defendant 20s., and 10s. 6d. costs.

At Edmonton Court, on the 19th February, Emily Bullerwell, John Hernaud, and John Smith, of the Hyde, Edmonton, were charged that they, at Edmonton, sold to Inspector Bridge a certain article of food—to wit, new milk—adulterated with 12, 6, and 9 per cent. of added water. In the case of Hernaud, he kept an oil shop, and sold milk to the very poor. The defendants were ordered to pay fines varying from 10s. to 5s. and cost of analysis.

JOHN BERNDSE, grocer, of the Hyde, Edmonton, was charged that he, at Edmonton, unlawfully had in his possession for use in trade a certain weighing instrument which was then and there unjust. Mr. Bridge, the inspector, said that he found some thin sheet lead under the goods-pan, amounting to fully half an ounce against the purchaser. Fined 40s. and costs.

JAMES LAWRENCE, of Edmonton, was also fined 20s. for failing to carry scales in his coal-cart.

WILLIAM LAMBERT, of Edmonton, was fined 20s. and costs for having in his possession a weighing machine, then and there unstamped.

On February 22nd, at the North London Police Court, Amos Sharp, of Tottenham, was summoned by Inspector Bridge for selling new milk deficient in fat to the extent of 30 per cent. Fined 30s. and 12s. 6d. costs.

On February 22nd, at North London Police Court, Thomas William Harris, of Tottenham, was summoned by Inspector Bridge for selling new milk adulterated with 9 per cent. of added water; also for having exposed for sale a parcel of margarine not labelled as directed by the Margarine Act. Fined in first case 20s. and 12s. 6d. costs, and 12s. 6d. costs in the second case.

On February 22nd, at North London Police Court, Richard Turney, of Tottenham, was summoned by Inspector Bridge for selling new milk adulterated with 8 per cent. of added water. Fined 20s. and 12s. 6d. costs.

On February 22nd, at North London Police Court, Caleb Arnold, of Tottenham, was summoned by A. L. Bridge, Inspector, for selling new milk adulterated with 16 per cent. of added water. Fined 40s. and 12s. 6d. costs.

SEIDLITZ POWDERS.

At West Bromwich, on February 24, John Salmon Mould, trading in High-street, West Bromwich, as the Wolverhampton Drug Stores, was summoned for selling seidlitz powders on December 17th last, which were not of the nature, quality, and substance demanded. Mr. A. Caddick prosecuted on behalf of the Corporation of West Bromwich, and Mr. Vachell defended. George William Davis, inspector, gave evidence as to the purchase of the powders, and said a third portion of them was handed over to the Borough Analyst. The box which contained the powders had the following statement printed in black and red ink across it:—"Genuine seidlitz powders; full strength; made according to the British Pharmacopœia formula. Directions: Dissolve one of the powders contained in the blue paper in a tumbler half filled with spring water, then add the contents of the white paper, continuing to stir for a few seconds; drink during effervescence. These powders are measured as near correct weight as possible. They are guaranteed the weights stated in the British Pharmacopœia."—In reply to Mr. Vachell, Mr. Davis said he did not complain of the quality or of the nature of the ingredients, or even of the introduction of any foreign ingredients: it was simply a question of weight as given in the British Pharmacopœia.—Mr. Vachell urged that the powders should have been mixed together and then divided into three portions. Seidlitz powders were recognised as an article of commerce long before the British Pharmacopœia was ever dreamt of.—The Stipendiary: We cannot go back to the year one.—Mr. Vachell: We might almost go back as far as that for the use of seidlitz powders (Laughter.) He contended that the British Pharmacopœia for the first time published a description of what seidlitz powders should be composed of in 1890, and chemists made up two classes of powders.—The Stipendiary said Mr. Vachell seemed to suggest that the British Pharmacopœia was not the standard for the making up of seidlitz powders.—Harry Silvester, borough analyst, said the average deficiency of the blue papers was 9.1 grains, whilst in the white paper there was an excess of 3½ grains. He did not examine each packet separately. He mixed them all together, and then made the analysis. He admitted in reply to Mr. Vachell that the powders submitted to him were exactly of the same nature and quality and substance as those prescribed in the British Pharmacopœia. It was a question of the packets being short measure. Arthur Winterbottom chemist, said the proper way to deal with seidlitz powders was to weigh them, and he considered the standard of the British Pharmacopœia the proper one. If the mixture was not

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properly made up serious results might accrue.—After a long argument the Stipendiary said he thought each packet should have been divided before being analysed, and it was no use going any further with the case. Mr. Caddick said his object would be attained if the defendant will sell in the future according to the British Pharmacopœia.—Mr. Vachell replied that the defendant did not intend to alter his course of business, or his practice in that respect.—The Stipendiary ultimately dismissed the summons on the ground that the samples had not been divided in accordance with the Act of Parliament.

BAD MEAT CASE—THREE MONTHS' HARD LABOUR.

At the County of London Sessions on Saturday, before the Common Serjeant and a jury sitting at Clerkenwell, John Harrington, meat salesman, was indicted under the Public Health (London) Act, 1891, for selling the carcase of a cow which was unfit for human food to Frederick John Robinson, a sausage and brawn manufacturer, carrying on business in St. Stephen's-road, Bow. Mr. R. D. Muir and Mr. W. C. P. Jay prosecuted on behalf of the Poplar District Board of Works; Mr. Geoghegan and Mr. Beaufoi Moore were for the defence. It appeared from Mr. Muir's opening statement that the cow in question belonged to a farmer near Glastonbury, in Somerset, and that owing to its having broken a bone it wasted away, and was finally shot and sold to a man named Chivers for 7s., the value of a wholesome carcase being £12. Chivers consigned it labelled "Cats' meat" to the prisoner, who carries on business in partnership with a man named Hopwood in Charterhouse-street. The prisoner sold it to Robinson on November 18th, 1895, and on the following day it was seized by a sanitary inspector. The meat was then discovered slimy, devoid of fat, stinking, and utterly unfit for human food. Robinson was prosecuted at the Worship-street Police-court on December 5th, 1895, and fined the maximum penalty of £50. After some evidence had been given in support of Mr. Muir's statement, Mr. Geoghegan said that his client did not desire to contest the matter any further, and the jury therefore found the prisoner guilty. Mr. Muir stated that the prisoner had been convicted of receiving stolen meat and sentenced to nine months' imprisonment with hard labour. The Common Serjeant said this was a very bad case, as the prisoner must perfectly well have known what the state of the meat was at the time he sold it to be converted into sausages, in which form it might easily be consumed without the people who took it recognising the nature of the stuff they were eating. He sentenced the prisoner to three months' imprisonment with hard labour.

THE SALE OF MARGARINE.

ACTION BY A RETAIL SHOPKEEPER.

In the Manchester County Court, on February 21st, before his Honour Judge Parry, Samuel Norbury, provision dealer, of Chapel-street, Ancoats, claimed £10 from Patrick Shee, wholesale provision dealer, Upper Mount-street, Harpurhey, as damages for loss incurred by the defendant selling to him margarine as butter.—Mr. Woodburne appeared for the plaintiff; the defendant appeared in person.—Mr. Woodburne said the case was one of considerable importance to shopkeepers. The plaintiff purchased 11lb. of so-called "Creamery" butter at 1s. per pound from the defendant, and exposed it for sale in his shop as pure butter. An inspector subsequently called and purchased two pounds, with the result that he (the plaintiff) was prosecuted and fined. He now sued for the recovery of the fines, for the legal expenses incurred, and for the injury which his business had sustained in consequence. Shortly after the plaintiff Norbury was fined at the City Police Court the defendant called and explained matters by saying that he had a new man mixing butter for him, and this man had made a mistake. His Honour said it was a very disgraceful case, and one which involved a gross abuse of the public, as well as of the plaintiff. He gave judgment for the plaintiff for £10.

ADULTERATION IN BRISTOL.

THE Watch Committee reported that during the past year the inspector had submitted to the analyst 319 samples of food, etc., viz.: Butter, 41; lard, 20; sugar, 18; pepper, 16; coffee, 15; mustard, 11;

vinegar, 8; liquorice, 7; ground ginger, 6; margarine, 4; pickled green peas, 3; glycerine, 3; cheese, bees-wax, cake, jam, and cider, 2 of each; and honey, tea, oatmeal, egg powder, cocoa, laudanum, and Friar's balsam, 1 of each. Proceedings were taken against the vendors of butter (2), lard (1), mustard (1), sugar (2), and pickled green peas (3).

FOOD PRODUCTS ADULTERATION.

ON the motion of Sir W. Walrond, a Select Committee was appointed to inquire into the working of the Margarine Act, 1887, and the Sale of Food and Drugs Act, 1875, and any Acts amending the same, and report whether any, and if so what, amendments of the law relating to adulteration are, in their opinion, desirable.

KESTEVEN COUNTY COUNCIL AND ADULTERATION.

MR. CHAS. E. CASSAL, the public analyst, submitted a report, from which it appeared that 20 samples had been submitted to him during the quarter ended 31st December last, 16 of which were genuine and four adulterated. Action was taken in the four cases of adulteration, three of the defendants being fined, and the other dismissed.

So wretched a number of samples as this is virtually no protection against adulteration.

THE "DAILY CHRONICLE" AND ADULTERATION.

WHAT is the matter with the *Daily Chronicle*? On Feb. 24, it informed us that "the annual report of the Local Government Board reminds us that the adulteration Acts remain almost a dead letter in many parts of the country, and are in no place efficiently enforced. The total number of samples analysed for the whole country during the year was only 16,305, of which over ten per cent. were found to be adulterated." For the information of the *Daily Chronicle* we may inform it that the total number of analyses during the year was 39,516, or one to every 734 of the population, and an increase of nearly 2,300 over the number made in 1893. Of the 39,516 articles examined, 4,060 only were found to be adulterated. There is only a difference of 23,211 between the *Daily Chronicle's* figures and the truth!!! But how does it happen that in a journal edited by the brilliant young man, mis-statements like this and unjustifiable paragraphs about the cause of lamp explosions so persistently occur? Can it be suffering from a bad attack of the absence of Fletcher?

Mr. ERNEST HART'S LATEST MOVE.

"THERE is a lively expectation in certain quarters, that a discovery has been made which will have an important bearing upon the food supply both of armies upon the march and of great cities. Mr. Ernest Hart, the head of the National Health Society, claims to have found new methods of sterilising milk, and of concentrating and condensing it without heat or the addition of sugar. By this method, which is said to be likely to create a revolution in the milk supply of urban communities and in the victualling of the navy, ordinary milk can be kept fresh from the cow for any length of time. Experiments with a view to this end have been proceeding for some time past, but it is only lately that they have been crowned with success." So says the *Eastern Morning News*.

As it is a grave offence for a medical man to advertise, it would be interesting to learn how these puffs of the *British Medical Journal's* editor find their way into print.

A BUTTER SECRET.

M'yes. We believe we know this secret. In the recent examination of Crumps in bankruptcy, one witness said they had acquired a very valuable secret, which they anticipated would lead to lots of business.

The Official Receiver: What is this secret of which

you make such capital?—It is a secret connected with the margarine trade, and we made a good thing of it. The business kept on showing better and better results so far as the profits were concerned. The loss was being made on the other branches.

Well, what was this valuable secret?—It was the manufacture of a mixture of butter and margarine.

The Registrar: A subtle combination. (To the witness): You need not give the trade secrets away. (Laughter.)

By the Official Receiver: In the statement of affairs he had included the trade secret in the item of goodwill which appeared at £1,200.

The Official Receiver: If I am informed that every provision merchant has a similar secret, would you be prepared to admit that it is true?—No, I should not. (Laughter.)

Mr. Wheeler suggested that all the particulars of the secret should be handed over to him or the receiver, for the debenture holders, in order that they might realise it for the benefit of the creditors.

In further examination, the witness said the profits of the business had gone up considerably since they acquired it. They paid a royalty of so much per hundredweight upon all stuff they turned out.

The Official Receiver: Had you a monopoly of the secret?—No, there were one or two others in it.

It was a sort of thing let out at so much a hundredweight, then, I suppose?—Yes. (Laughter.)

And that was the sort of thing that made the goodwill of your business so valuable?—Yes.

We think a firm of butter-blending machine makers in Holborn could give some information on the point.

CORRESPONDENCE.

THE NUTRIENT VALUE OF MEAT EXTRACTS.

To the Editor of FOOD AND SANITATION.

SIR,—Doubtless in common with thousands of my brother practitioners, I have read the article in last week's *Lancet*, which reflects upon your remarks anent Meat Extracts in your issue of December 15 last.

Although in your efforts to emphasize your point, you (in my humble opinion) travel too far into the "superlative degree," and by so doing have laid yourself open to a certain amount of admonition your contemporary has not been slow to administer, still I think that in undertaking the task you took in hand you have given your readers most useful information, and have touched upon a subject most suitable for a publication such as yours.

I have for many years been inundated with literary matter and samples of meat extracts, all claiming to be "better than each other," and I had come to a somewhat similar conclusion to yourself, when the *Lancet* article cropped up, and "set me a-thinking" again, which article would probably never have appeared but for your "accentuated" method of expression.

If you are as much "at sea" with the subject as the medical press above referred to tells me you are, I should like to have some better proof of your ignorance than the bare contradiction, even of an organ such as the *Lancet*. If that newspaper is so ready to condemn, or question the accuracy of an article in a non-professional periodical like yours, it should be equally ready to "give chapter and verse" for what it bases its criticism upon,—and although believing as I do that it is, from a literary point of view, the only "Cæsar's wife" to which my profession is "wedded," I should be the last man to question its *bonâ-fides*, still, I think that it would have shown better taste if, instead of the dogmatic article I refer to, it had inserted a tabulated form of analyses of meat extracts, and left me and my

brother medicos to draw our deductions therefrom. It appears to me that the action it has taken in this matter seems to tacitly infer that you, sir, have given such desirable information to the public as has been withheld by the *Lancet* from the medical profession, which information ought to have been given to it upon a subject so vitally important long ago, and that because you have taken the initiative in a somewhat too fearless manner, you are to be "sat upon." Another reason for instituting this last process may also be that the *Lancet* (always keen to uphold the dignity of we much-abused practitioners) has felt aggrieved at the parade of names you made of "the testimonial writing fraternity," for if your statements are reliable, these "writers" are more or less "false witnesses."

In what direction, then, am I to look for light upon this all-important and conflicting subject? I have neither the time, nor, if I had it, the apparatus wherewith to analyse the extracts myself. You have done it for me, and my knowledge of chemistry, coupled with your information, have taught me how to exercise my judgment. If your analyses are wrong—and why should they be?—let the *Lancet* correct them, or publish others, but because you, who publish a non-professional periodical, have ventured to furnish me with most useful information, and my *Lancet* has not done so, am I to wait in ignorance until that publication pleases to give it to me, and can I not place what value I choose upon the remarks it makes concerning you? Its article is no doubt written by some first-magnitude star, compared to which I am invisible, but I have yet to learn that hæmoglobin is the best blood-forming material, or that material which has once assisted to form blood is in its chemically-changed condition a desirable element to recommence work in this direction, work which I consider is best done with elements in their crude state, as witness the disappointing effects associated with the use of dialyzed iron, and the ready way that the tincture of iron, or Schwalbach mineral water, improves the quality of "life's current."

I look forward to seeing your reply to the article referred to. I hope that you will "hold the fort," and if what I have written will assist you so to do, I am very pleased with having spent a useful half-hour over this letter.—Yours truly,

"M.D."

February 25, 1896.

YEOVIL AND PUBLIC SLAUGHTER HOUSES.

In a recent report Mr. Garland, M.O.H., complains that "the Corporation had no power to deal with slaughter-houses that were not so before 1858, provided that they are kept clean, and according to the bye-laws. I do not hesitate to say, as a consequence of such procedure, that I have seen more bad meat, unfit for food of any kind, during the last twelve months, than I have ever remembered. To a certain extent I attribute this to the fact that the premises in question are quite unfit for storing any kind of meat, salt or otherwise; hence a source of danger to the public arises, especially to the lower classes, who are the chief buyers of such goods, which, nine times out of ten, are not exposed for sale, but taken from some stinking receptacle on purchasing."

DRONFIELD SEWAGE DISPOSAL SCHEME.

A LOCAL GOVERNMENT BOARD Inquiry was recently held by Colonel Durnford, R.E., into an application of the Dronfield District Council for a loan for the purpose of sewage disposal works. Dr. Mackintosh, medical officer of health, gave evidence in favour of the scheme, and Mr. George White, C.E., of Mexboro, the engineer for the new works, exhibited the plans and levels, and stated that the method of purification to be adopted was

that known as the International system of Ferozone and Polarite—oblong tanks with patent sludge removal apparatus. There was no opposition to the scheme.

Mr. W. S. GILBERT dropped into the opera-box of a parvenu friend one evening when "The Magic Flute" was on the bills. After asking him who wrote the music, the lady said "Mozart—Mozart! Never heard of him before. He's immense! Why isn't he here? Why isn't he doing something else? Why isn't he composing?" "Because he's decomposing, my dear lady," answered Mr. Gilbert.

A REMEDY FOR BURNS.—Dr. Thierry, of the Charity Hospital, Paris, has discovered a remarkable remedy for burns. The doctor has had charge of the surgical operations at the hospital, and used picric acid as an antiseptic. One day a drop of lighted phosphorus from a match fell on his hand, without any sensation being felt, and the same experience was noted when some hot sealing-wax dropped on his hand. From that time the doctor tried picric acid on patients suffering from burns. The tissues of the epidermis coming in contact with the acid strongly contract, an action quite the contrary to that caused by fire or a burn of any kind. Under this treatment no blisters form on the injured part.

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THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

After eight months' investigation in the Public Health Laboratory of the University of Edinburgh to estimate the value, in prevention of disease, of the best known Carbon and Asbestos Filters, of the Pasteur Filter, and of a copy of it in another material, Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., states:—"The Pasteur-Chamberland Filter is undoubtedly the best, and the only one in which reliance can be placed for permanently sterilizing drinking water."

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Food & Sanitation

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Applicants must have either passed the Qualifying Examination of the Board of Trade, or pass it before 31st March next; and must commence work on the 1st April next.

The Salary will be £200 per annum, payable quarterly, with allowances of £60 a year for purchase and keep of horse, and 5s. a day (when travelling) for travelling and other expenses. An Assistant and accommodation for the Standards and necessary equipment will also be provided. There will be no Superannuation allowance or Pension.

The Inspector will be under the control of the Chief Inspector. He will be required to reside at Chester-le-Street or Bishop Auckland, as the County Council may from time to time direct. He will be required to devote the whole of his time to the duties of his office, and to give security to the amount of £200 for the faithful performance of his duties, and the safe custody of the plant and books.

The appointment will be held during the pleasure of the Council, subject to three months' notice on either side.

Applications, in the handwriting of the candidates, stating age (which must not exceed 45), qualifications and references, and accompanied by not more than three testimonials, to be sent to the undersigned, not later than SATURDAY, 14th March next.

Personal canvassing will disqualify, but any candidate will be at liberty to send copies of his application and testimonials to the members of the Finance Committee, a list of whom will be supplied on application.

Forms of application and further information can be obtained from
RALPH SIMEY,

Clerk of the County Council,
Exchequer Buildings, Durham.

27th February, 1896.

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Food and Sanitation.

SATURDAY, MARCH 7TH, 1896.

THE SELECT COMMITTEE ON MINERAL OILS.

In the House of Commons recently, Sir M. White Ridley said that he was not aware that the law in America with regard to the sale of paraffin oils was

that producers were not allowed to sell to consumers in the United States paraffin oil with a flash-point under 95 deg. or 100 deg. F., while they could ship to this country oil with a flash-point of 73 deg. F. and under. In fact, he was advised that the law as to flash-point varied in nearly every state, and that in some states there was no law at all. To prohibit the importation of petroleum with a flash-point of less than 95 deg. or 100 deg. would be prohibitive of mineral spirit which was required in many industries; but the question of whether any amendment of the law in regard to flash-point was desirable was one that would doubtless be carefully considered by the Select Committee of the House of Commons.

Now, we wish to warn the Select Committee what they will have to face. They will have one or two "Sirs," "Expert witnesses," of the most shameless type that disgrace science in England; they will have the "nobbled" mineral oil section of the London Chamber of Commerce, worked directly in the interests of the American oil-gang; they will have tainted evidence from pseudo-analysts, and they will hear from the Public Control Department of the London County Council that the lamps and not the oils are at fault. It may not strike the Select Committee to ask if the person, who is busy in propagating this yarn, is the same person as the inventor of a new safety paraffin lamp, which were a Select Committee to recommend it, would be very profitable to all interested in its sale. Last, but not least, the rubbish published by the *Lancet* under the pretentious title of the "*Lancet* Commission on dangerous paraffin lamps" will be used. The Select Committee should be on its guard against the evidence we mention.

Dr. D. Kydd, of Bogindollo, Forfar, deliberately challenged the *Lancet's* statements in a letter of Feb. 5 last, as follows:—

DEAR SIR,—I glanced over your article on paraffin lamps, but with its conclusions I do not agree. I enclose a cutting from FOOD AND SANITATION, in which you will see that the blame of all accidents is thrown on the dangerous oils brought to this country from America. I, myself, have tested paraffin by dipping lighted matches into it, but in every case the match was extinguished. The article enclosed will show you that before the inquiry is complete your commissioners will have to examine the oils used, particularly in England. It will not do to take for granted that the oils are safe because there has been some legislation on the subject.—I am, yours truly,

The Editors of the *Lancet*.

D. KYDD, M.D.

Dr. Kydd's tests, as he lives in Scotland, were, of course, made with Scotch oil, which has 100 deg. flash point, and not with American oils, which flash at 73 deg.; but the *Lancet* pretended to understand that Dr. Kydd's tests were with the American oils. It said:—

We did not consider that anything was to be gained by printing the above, but contented ourselves with making the following reply:—

"Dr. Kydd, of Forfar, N.B., does not agree with the conclusions of this Commission. He thinks the American oils are at fault, and supports his contention by adding that he has tested paraffin by dipping lighted matches into it, but in every case the match was extinguished!"

Upon this we have received the following letter:—

"Bogindollo, Forfar, N.B., 18 Feb., 1896.

"Sirs,—I got your paper containing the garbled extract of my letter to you. I would have expected more honesty from a paper of your supposed standing, but you are apparently stuffed with conceit of your own Commission. I should have thought the article I sent you might have carried some weight, but your garbled extract gives my letter a different meaning altogether.—Yours, without respect,

D. KYDD, M.D."

This garbling of Dr. Kydd's meaning, and the *Lancet's* shrinking from facing squarely and fairly our proofs that the *Lancet* commission was a humbug need no comment. It is shameful that on a question, involving as this does the sacrifice of a life per day, the loss of many thousands of pounds' worth of property, and the thrusting out of work of thousands of Scotsmen who would find remunerative employment in the Scotch shale oil industry were England freed from its position as the dumping-ground for refuse oils which America will not allow to be sold at home—it is shameful, we say, to find a paper purporting to speak for the noblest of pro-

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fessions adopting such an attitude. Our article referred to by Dr. Kydd was as follows:—

THE AMERICAN OIL GANG, AND WHY THEY ROAST ALIVE HUNDREDS OF ENGLISH PEOPLE YEARLY.

Coroners' juries who know nothing of the question, and interested "expert" witnesses who know more than they care to reveal, have been very successful of late in hounding the public into the belief that the roasting alive of so many hundreds of people yearly by oil explosions is due to common, cheap lamps. More than three hundred people are burnt alive annually, but their deaths are not due to faulty lamps. They are victims to a gang of American oil monopolists who control the bulk of the American oil supply, and who have hesitated at no crime, from bribery to arson and murder, to secure their millions of dollars, as we shall presently clearly prove, from United States Government documents. Nearly one fire out of every five in London, and one in eight in Liverpool, is caused by oils, as the principal insurance companies well know. The insurance companies had experiments made a little over a year ago with American and other oils, when the American oils were found the most explosive examined. Some flashed as low as 69 degrees. Lighted matches thrown into various oils proved that American oil heated to 88 degrees blazed immediately, but thrown into Scotch oil the matches were extinguished. How did this happen? For the simple reason that Scotch oil is sold at no lower than the hundred degrees test. But our Government allows American oil to be sold at 73 degrees test, because Professor Abel reported that 73 degrees was safe. Let our readers remember the one fact that in Glasgow, where the oil used is mostly Scotch of a hundred degrees flash point, the fires by oil are 1·7 per cent.—i.e., less than one in two hundred—whilst in London, where the murderous American oil is used, fires by oil come out at over 19 per cent.—about forty times as many. We wish we could brand on the memory of every man and woman who reads this article the following remarks by an American writer, Henry D. Lloyd, in "Wealth v. Commonwealth," published by Harper Bros., New York, this year.

Mr. Lloyd says:—"Out of every hundred barrels of various kinds of products from the distillation of petroleum, forty are of an illuminating oil not good enough to be burned in this country (America). It must be sold in Europe, or not sold at all." It is "not good enough for America," so we allow it to pursue its devastating course in England, causing fires, raising insurance premiums, and roasting alive hundreds of our men, women and children yearly. The Testimony Trusts Congress, 1888, pp. 818 to 873, record how the oil gang bribed an employé of an oil distillery at Buffalo antagonistic to them to cause an explosion. This employé weighted down the safety valve with heavy iron and packed it with plaster of paris, and then ordered the fireman to put coal into it until the fire-box was cherry-red. When this was accomplished he went away from the works, leaving the unsuspecting victims of this infernal work to explosion and roasting alive. Fortunately, the dastardly work was not well enough done, and the safety valve lifted itself, for, despite weights and plaster, the unusual pressure blew it open, and it did not keep the gases in to explode as had been planned by the American Oil gang. For this villainy some members of the gang were put upon their trial and convicted, but they were powerful enough to bribe the law, and, although the jury on May 18, 1887, brought in a verdict "guilty, as charged in the indictment," an accommodating judge fined the criminals two hundred and fifty dollars each. He got his reward later in preference to a supreme judicial position in America. The *New York World* said of the sentence: "It is calculated to make men, of more boldness than morals, blow up factories." We commend these facts to the attention of Lord Dunraven, as it may interest him to know them, and give him cause for thankfulness that he even got his yacht home again.

When these gentlemen were not organising such means of making competition impossible, they had persons employed cutting or plugging the oil pipe lines of the honourable men who would not join their combination. This sort of thing is not unique on the part of American millionaires. It is what they call "smart," as the records of the American Whisky Trust affords evidence. Every

important distillery in the Northern States, save two, were in the Trust, and the larger of the two was in Chicago. These two would not join the Trust, so on February 3, 1888, the Trust had a private meeting. In April following, the Chicago distillery caught a spy of the Trust in the works who made a confession. In September it was discovered that the valve of a vat in the distillery had been tampered with in such a way that an explosion would have occurred had it not been found out in time. The owners even after that attempt refused an offer of over £200,000 from the Trust for their works. Three months later the distillery was exploded by dynamite, one dynamite package, which had failed to explode, though the fuse had been lighted, being found by the Chicago police. In Feb., 1891, the secretary of this Trust of American gentlemen was arrested by the United States' authorities for attempting to bribe a Government gauger to blow up a distillery that would not join the swindle. If the explosion had been carried out 150 men would have been destroyed. The gauger was offered 25,000 dollars for the job, and straightway told the Government officials of the plot. By his superiors' instructions he went so far as to receive from the secretary the bomb for the infernal work to place in the distillery, to which in his official position he had access. He was told he would have ample time to get away, but on being examined by the Government authorities it was disclosed in Congress that even the gauger's death had been planned, as the bomb was made to explode instantaneously. But the power and money of the Trust was so enormous that although their secretary's trial began, it lapsed. These are but a hundredth part of the infamous practices for which Mr. H. D. Lloyd, in the work we have quoted, gives the name and date of every Congress paper and court procedure proving their accuracy. The Oil gang are many of them Church elders, but they can vary prayer with arson or dynamite, ruin their thousands, and cause the roasting alive yearly of hundreds of persons in this country, and our Parliament has no time to make the crime impossible. We have shown cause sufficient for the question we ask, "Why should England be the dumping-ground for murderous refuse oils which are not permitted to be sold in America?" It is one we ask particularly of every member of both Houses of our Legislature, because they have the power to stop forthwith these American oil atrocities.

We are prepared to prove every statement in the above damning indictment of the American oil gang, and in the public interest we should be lacking in patriotism if we allowed the true issue which the Select Committee is elected to try to be burked by the methods and evidence to which we have directed attention. Plain speaking is necessary to save one English man, woman or child per day from being roasted alive to enrich an American oil gang, composed of the most atrocious scoundrels unhung. We should like to know what was the "*fons ab origine*" of the *Lancet's* Commission, and why that journal garbled Dr. Kydd's meaning. In the meantime every day furnishes object lessons like the following:—

The upsetting of an oil lamp caused a fire on February 28, at 16, Lant-street, S.E., occupied by Mr. Thomas Howell, aged 23 years, who was so seriously burnt that he had to be removed to the hospital.

THE SEQUEL TO W. T. STEAD'S DRINK CURE.

READERS who remember our exposure of W. T. Stead, the Mattei Quack Cancer Cure Swindle and Stead's Drunk Cure will be interested in the following case heard in the Divorce Court last week.

The respondent was a late assistant to Mr. Stead on the *Review of Reviews*, and the wife had a tale of cruelty to tell which provoked very severe comments from the judge. There was no defence. Mrs. Le Couteur said she was married at Liverpool in 1883, her husband being then employed in an office. There had been six children of the marriage. Later on her husband came to London to assist Mr. Stead, leaving her behind to nurse her aged aunt, but from time to time visits were exchanged. On one of her visits to London she was introduced to Maud Rogers, who was also employed at the *Review* office. Some time after that her husband asked her to lend him £600 to open a home for inebriates. She did so, and he took a house known as the Garple, North Finchley. When witness joined him there subsequently she found Miss Rogers installed as secretary and housekeeper, and while witness was treated with contempt, Miss Rogers was given the position of mistress of the house. During the time she was there her husband, by means of threats that he would go abroad with Miss Rogers if she refused, induced her to part with between £300 and £400 more. Ultimately witness left him and returned to Liverpool.

A man, who had been previously employed at the Garple as butler said that Mr. Le Couteur and Miss Rogers had bedrooms opposite each other, and the bed of the former was often left undisturbed. Upon one occasion he met the respondent coming from Miss Rogers's room in his nightshirt. When Mrs. Le Couteur came she was treated with contempt, and would be left at one end of the table while Mr. Le Couteur and Miss Rogers would sit at the other. Miss

Rogers, on one occasion, in the presence of the wife, sat on the floor with her arms across Mr. Le Couteur's knee.

Dr. Watson, who was engaged at the home for inebriates as medical officer, told of the terrible neglect and contempt from which the wife suffered. She came there a bright, happy woman, qualified to grace any social position, and left broken-down and aged. If she had had to bear her position much longer she would probably have had to go to an asylum. Witness spoke to Mr. Le Couteur and to Miss Rogers about the matter, but there was no alteration in their conduct. Mrs. Le Couteur was then pregnant. She would often plead with her husband for better treatment in the most tender manner, but without result.

Sir Francis Jeune, in granting a decree nisi, with costs and the custody of the children, said the cruelty had been of the most heartless description, and of a kind calculated to cause the most grievous suffering.

Some of our readers were inclined to think we were too harsh on this swindle. They may alter their opinions now.

FOR COMMON SENSE AND ENGLAND.

It is a curious illustration of the thoughtlessness of the press that only one English newspaper has the sense and courage to speak the plain truth about the Government proposals for the relief of agriculture, and that that newspaper should be one which is unfortunately read far too little considering its high literary merit. For years *Reynold's Newspaper* has been an ardent fighter of shams, a fearless, outspoken journal, every line of which has been a plea for the poor, the downtrodden, and the oppressed. If the Government wished to do justice to agriculture, it could do so by breaking down iniquitous railway rates, by extending light railways, by grants in aid of co-operative creameries, by compensation for tuberculous cattle, and other like practical measures. If it wants to give employment with public benefit to thousands of the people of the three kingdoms, it could do so by grants in aid of our neglected fisheries, and legislating, so that the poor could buy that wholesome and nutritious food at reasonable prices, but it does not. What it does is tersely put in *Reynold's Newspaper* :—

"The Government are promising to do something for the farmers. But what is it they intend? Merely to take a portion of the general taxes and to apply them in relief of rural taxation. In other words, they are going to establish a form of national protection—the towns are to be bled in order to bolster up a rotten land system in the country. Now, the farmers themselves must know that this is no remedy. What is required is an extension of the Irish Land Laws to England; in other words, to give English farmers fair rents, compensation for improvements, and the free sale of their good will or tenant right. If these things are good for Ireland, would they be bad for England? Who wants land monopolists? Nobody but themselves. But is the body politic to suffer for the pride, convenience, and profit of a few? The landlords are the cause of the poverty of our towns, as the agricultural man has no proper facilities to acquire land of his own. The landlords are the cause of our buying so much food from the foreigner, because he will not allow the land to be broken up into suitable plots for the raising of dairy produce. The landlords are the cause of heavy rates in town and country, as the workhouses are the direct result of this accursed system. And as if this were not enough we have the parsons on the land squeezing from it a tithe tax of some £6,000,000 a year."

It is a pity we have not more newspapers possessed of courage, knowledge, and honesty to hold aloft the torch of truth in this age of cant, lies, and shams. Rates and taxes would be lighter, and our casual wards and workhouses less populous.

AMERICAN V. HOME INDUSTRIES.

STRAWS show how the winds blow, and the following jubilant whoop, in the *American Paint, Oil, and Drug Review* of February 19, ought to open the eyes of all who lament the decay of some home industries :—

"The American petroleum interests have gained a distinctive advantage in the English market through the dissolution of the Scotch oil combine, chronicled in the *Review* of a week ago. The combine lost money for its investors continuously from the start, under pressure of competition from the United States, and was compelled finally to surrender to the inevitable.

"In Scotland, there is almost inexhaustible quantities of black shale, loaded heavily with petroleum, which is obtained by distillation. It is stated that a ton of crushed shale yields from two to three barrels of oil of superior quality, produced at a cost about equal to

the expense of producing American oil of the same grade and laying it down in any of the market centres of the British Isles.

"The dissolution of the Scotch combine is expected to lead to a large increase in the use of American oil in Great Britain, Russian oil not having gained a foothold with English merchantmen and consumers. The contest between the American and Scotch interests has been a long and spirited one, and the former has won a substantial victory.

"Of course, the outcome of the struggle can be regarded only with satisfaction by the commercial world on this side, for it means an increase in the total of our export trade, and to that extent a diminution of the harmful trade balance maintained against us; this, in turn, will have a salutary influence on the volume of primary money (gold) exported, and create a feeling of security in all lines of trade that will be far-reaching in its consequences."

COVENT GARDEN'S DUKE AND TRADERS.

IN view of the fact that Parliament is about to make grants in aid of our "Splendid Paupers," the following example of the generosity and worth of one of them is touching. Our contemporary, *The Greengrocer*, says :—

"Take Covent Garden Market as a case in point. Last week an old tenant giving up his shop through the continued badness of trade, agrees to hand it over to another salesman who would take the "empties" of the retiring salesman at a valuation, and a poor one too. All is settled between them, but they had reckoned without their ducal landlord. What happens? His agent is agreeable to the change, but there must be a tightening of the screw; the rent must be raised. And to what extent, 5 or 10 per cent.? Oh, dear no, but to the tune of over 100 per cent. Thus is trade disorganised, and premiums given, as it were, to questionable practices in the country, *par excellence*, of free trade."

MR. HANBURY, SIR HOWARD VINCENT, AND COCOA BUTTER.

IN the House of Commons, on February 21, Mr. Hanbury, replying to Sir H. Vincent, said it was possible that the importers of cocoa butter had a fractional advantage over the producers of British and Irish butter. The question was complicated and was under consideration.

We have here a spectacle of two legislators, in all seriousness, discussing the impossible. For the benefit of the honourable gentlemen, we may inform them that cocoa butter in 1895 averaged about 1s. 2d. per lb., and that no one but an ass could believe that it would be used to adulterate cow butter, which does not average so high a price.

FRUIT AS A FOOD AND MEDICINE.

THE great mass of the people look upon fruit as a luxury upon which they can only spend odd pennies for the amusement of their children. Many parents will more readily spend money on injurious or even poisonous sweets than they will on good healthy fruit, and fashionable society will spend pounds on cakes, wines, and brandies, while they spend as many shillings on the very thing they need to keep them healthy—fruit. And as for the amount of drugs swallowed which should be replaced in great measure by fruit it is beyond my powers to calculate. Millions upon millions of pounds are spent annually upon mercurial and other purgatives, most of which would be quite unnecessary if the people would but look upon fruit as a necessary article of diet. The fruit grower of the future must try to so educate the public mind that this state of things will be altered. The man who makes sweets puts them up in all sorts of tempting boxes or packages, then he pushes the sale in various ways. Why should we not have fruit palaces where, at reasonable prices, people could get the choicest fruit at any hour of the day?

Good ripe fruits contain a large amount of sugar in a very easily digestible form. This sugar forms a light nourishment, which, with bread, rice, etc., form a food very suitable for our climate; and when eaten with say, milk, or milk and eggs, the whole forms the most perfect and easily digestible food imaginable. For stomachs capable of digesting it fruit eaten with pastry forms a very perfect nourishment, but I prefer my cooked fruit

covered with rice and milk or custard. Although I look upon fruit as an excellent food, yet I look upon it more as a necessary adjunct than as a perfect food of itself. Why for ages have people eaten apple sauce with their roast goose and sucking pig? Simply because the acids and pectones in the fruit assist in digesting the fats so abundant in this kind of food. For the same reason at the end of a heavy dinner we eat our cooked fruits, and when we want their digestive action even more developed we take them after dinner in their natural, uncooked state as dessert. In the past ages instinct has taught men to do this; to-day science tells them why they did it, and this same science tells us that fruit should be eaten as an aid to digestion of other foods much more than it is now. Cultivated fruits, such as apples, pears, cherries, strawberries, grapes, etc., contain on analysis very similar proportions of the same ingredients, which are about 8 per cent. of grape sugar, 3 per cent. of pectones, 1 per cent. of malic and other acids, and 1 per cent. of flesh-forming albuminoids, with over 80 per cent. of water. Digestion depends upon the action of pepsin in the stomach upon the food, which is greatly aided by the acids of the stomach. Fats are digested by these acids and the bile from the liver. Now, the acids and pectones in fruit peculiarly assist the acids of the stomach. Only lately even royalty has been taking lemon juice in tea instead of sugar, and lemon juice has been prescribed largely by physicians to help weak digestion, simply because these acids exist very abundantly in the lemon.

Another great action of fruit in the body is its—shall I call it—anti-scorbutic action. It keeps the body in a healthy condition. Good fruit clears the blood and prevents this sort of thing. This lemon-juice cure for rheumatism is founded on scientific facts, and having suffered myself from acute gout for the last fifteen years, I have proved over and over again the advantages which are obtained from eating fruit. Garrod, the great London authority on gout, advises his patients to take oranges, lemons, strawberries, grapes, apples, pears, etc. Tardieu, the great French authority, maintains that the salts of potash found so plentifully in fruits are the chief agents in purifying the blood from these rheumatic and gouty poisons. Perhaps in our unnatural, civilised society, sluggish action of the bowels and liver is responsible for more actual misery than any other ailment. Headache, indigestion, constipation, hæmorrhoids, and a generally miserable condition, are too often the experience of the sufferer, and, to overcome it, about half the drugs in the world are given in all sorts of compounds. But bring in your fruit and the whole scene changes. If we go through the back streets of our large towns, how many pallid-faced, listless-looking people and children swarm around us, and they have, as a rule, plenty of food.

As a medicine I look upon fruit as a most valuable ally. When the body is in that breaking-up condition known as scurvy, the whole medical profession look upon fruit and fresh vegetables as the one and only known remedy. I believe the day will come when science will use it very much more largely than it does now in the treatment of many of the every-day ailments. Impure blood means gout, rheumatism, skin diseases, rickets, and other troubles. As it is proved that fruit will purify and improve the quality of the blood, it must follow that fruit is both food and medicine combined. In fevers I use grapes and strawberries, giving them to my patients in small but frequent doses—oranges and baked apples, if the others are not obtainable. For rheumatism plenty of lemons are invaluable. White girls with miserable, pallid complexions, want a quart of strawberries a day; where these are not obtainable, bananas, which contain much iron, are a good substitute. Probably, of all fruits, the apple stands unrivalled for general purposes in the household; either raw or cooked it can be taken by nearly everybody, and it contains similar properties to the other more delicate fruits. To my mind the pear is more easily digested than the apple,

and for eating uncooked is superior to it. Dried fruits should be used when green cannot be obtained. If soaked for a few hours before cooking they make a capital substitute for fresh fruits, and they come cheaper to the consumer.

For preserving fruits I look upon bottling in glass bottles as the coming thing. Not by use of chemicals, such as salicylic and boracic acids, and the various preservatives made from them, but simply by protecting it after cooking from the fermentative germs in the atmosphere. It keeps for years, turns out even more palatable than green fruit, is equally digestible, and contains all the virtues of freshly cooked fruits. Canned fruit is not so good; the acid of the fruit dissolves up tin and lead from the tin, and I have seen very serious cases of illness as a result. Besides, fruit should be sold much cheaper in bottles than in tins, as the bottle can be returned and used again.

RAILWAYS AND TRADERS.

THE result of the severe struggle between the Mansion House Association of Traders and the London and North-Western Railway Company before the Railway Commissioners shows the powerlessness of traders and the public to deal with abuses which cripple home industries. It was criminal folly to have ever given to railway companies powers and privileges which enable them to snap their fingers at the public welfare and convenience, but we are at present in their power, and traders who subscribe a few thousands of pounds amongst themselves to fight any particular grievance are only throwing their money away to benefit legal sharks. In these contests the railways always load the dice; they do not allow the specific wrong to be discussed, but hire the ablest liars to obfuscate the issue by pointing out that any one particular rate depends upon another rate, whilst that in its turn is affected by some others which again depend upon more rates, and, as there are something like a million of these rates, the companies not only exhaust the traders' finances, but make real enquiry impossible. They made competition equally impossible, for they "cornered" such canals as seriously menaced their monopoly and carefully contrived that the canals should fall into desuetude. If traders wish to free themselves from the railway shackles, they must put craft against craft. There is a House of Commons, and there is such a thing as a traders' party possible. Powerful as the railways are, a short Act could abolish every rate, iniquitous or otherwise, that they levy, and a committee fix equitable ones. Of course there would be an outcry about the rights of property, but property has its duties as well as its rights, and public safety demands that the railway monopolists be taught this. With the possibilities opened up by the road-car systems, there may be shortly seen a surprising willingness on the part of railways to "climb down;" they may even ask State ownership of railways, cease to anathematise such proposals as socialistic, and express their willingness to hand over their property at a fair price, the said fair price being of course fixed by "experts." It is just as well to be prepared for this, and the country will lose less if traders will do all they can to make easy the path of the new horseless carriage by removing legal restrictions to its extended use. In that way competition to railway monopoly lies, and once that competition exists traders may give the railways a yard of their own measure. American railway companies over the oil regions enforced their claims, as do English ones, with fronts of steel and throats of brass until harassed traders devised a "pipe line." English railway reformers have wasted more than enough money in vain appeals for fair treatment. Half that amount spent in aiding competition and in a war against monopoly in the House of Commons would have given the railway companies and their hirelings

in Parliament that wholesome fear which ever precedes reform, but traders have first to learn common sense, and to recognise that it is folly to send to the House of Commons railway directors and the like, past masters in the game of humbug. A few weeks ago a pæan of praise went up for the Great Eastern Railway for certain concessions to farmers.

A correspondent in the *Times* shows what they were worth. He ordered a hundredweight of potatoes from Upminster (fifteen miles from London), to be delivered at Croydon, and the Great Eastern Railway Company charged 2s. 6d. for carriage—exactly the price of the potatoes. He afterwards ordered another hundredweight of potatoes from a farmer at Ilford (nine miles from London), to be delivered by Carter, Paterson, and Co. to Croydon, and these carriers charged 9d. for the same weight. True, the potatoes were carried a shorter distance by six miles, but that would not account for such a disproportion in the charge.

The moral of this is that the measure of the railway companies' just dealing is in exact ratio to the strength of the combination and competition they have to face. Common sense, it may be supposed, would dictate to our railways that their interests lie in encouraging native industries, instead of rating and harassing them out of existence, but, curiously enough, they will lose thousands of pounds in developing German, Dutch, and other foreign trades, and overcharge home ones to cover the loss. They will with truculent insolence, as did Mr. Forbes the other day, bully the public because they avoid filthy carriages and a filthier atmosphere, and have the sense to use omnibuses and trams where possible. But in this the railways are true to the spirit of monopoly which is ever inimical to the public welfare.

THE NEW ILLUMINANT.

ACETYLENE gas has become the scientific wonder of the day—though it is not certain that the process by which it is secured is new, since several claims to priority have already been put forth, and one in particular, on the part of a German scientist, cites this individual's own words as evidence that he, years ago, produced acetylene by precisely the same methods that are now employed. But acetylene as an illuminant is certainly more or less of a novelty, and the probable speedy application of this agent to domestic purposes constitutes a wonder and a distinct mile-stone of progress in the world's history.

The securing of cheap fuel and light has long been a vital problem, especially in cities and large towns where "booming processes" have brought high rents, exorbitant taxes, and fancy prices for real estate. The citizen to-day feels a tax of five dollars per ton for coal a burden; in most communities of considerable population wood is entirely out of the question, oil unavailable because of its odour, gasoline dangerous to both property and life; and where natural gas is existent it lacks many essential qualities, and is moreover wasteful, besides being extravagant in price. Here, fortunately, acetylene promises to step in and solve the problem, not alone for city residents, but even for the denizens of farms, forests, and cross-roads. The cost of producing the gas is slight, and with improved methods will steadily grow less—at least this is the lesson taught by experience. Waste in producing, too, is at a minimum, which means further economy—at the present time nearly ninety per cent. of the power in coal is lost in the process of combustion, while with acetylene almost the entire power developed may be utilised. The labourer, the merchant, the doctor, and the chemist all will benefit materially by the production of a new, cheap, bright, wholesome and almost smokeless means of fuel and light.

Under great heat, such as is readily developed in the electric furnace, coke and lime may be combined chemically to form what is technically known as calcium

carbide, and this latter when placed in water—no heat being required—decomposes and the original elements are liberated, forming acetylene gas and lime; that is to say, the coke, which is a form of carbon, unites with the hydrogen of the water and sets the lime free, when the latter can be employed again if desired.

The result is a gas ten times more brilliant than the best that can be produced from coal; in other words, one small burner consuming one cubic foot of acetylene per hour better supplies a large room than two burners each consuming four cubic feet of ordinary illuminating gas. Further, the acetylene vapour can be employed in the piping already laid for either coal or natural gas. The readiness with which it can be produced offers illimitable opportunities for many in the way of affording independent light or even fuel for factories, residences, cars, streets, or carriages; and it possesses the notable advantage that colours can be as accurately determined under its illumination as under the rays of the midday sun.—*Medical Age*.

TOFU.

A VEGETABLE preparation possessing many of the dietetic properties of meat is produced in Japan under the name of "tofu." It consists principally of the protein matter of the soya bean, and is said to be as easily digestible as beef. It is freshly made every day, and is sold in thin tablets of snow-white colour, and of the consistency and taste of freshly-precipitated casein of milk. The name "vegetable cheese," proposed to be applied to it, is not justifiable, as there is no trace of bacterial action associated with its preparation. Another form, known as "kori-dofu," is prepared by exposing the fresh tofu tablets to the action of frost, with the result that they shrink considerably, lose water, and become more compact. Fresh tofu contains, on the average, 89 per cent. of water, whilst kori-dofu contains only 15.3 per cent. in the air-dry condition. Tofu is manufactured by the people, who sell it in their shops. The beans are first soaked for twelve hours in water, and then crushed between two millstones to a uniform pulpy mass. This is boiled for an hour with three times its quantity of water, and is then filtered through cloth. The liquid passes through white and opaque, exactly like cow's milk, whilst the smell and taste is suggestive of fresh malt. Upon standing, very fine particles separate on the surface, and these under the microscope are easily recognisable as small globules of fat. After two or three days there is a strong development of lactic acid, under the influence of which the casein separates exactly as in the souring of milk. Mr. Inouye, of the College of Agriculture at the Imperial University, Tokio, states that in preparing tofu tablets from the fresh milky liquid about two per cent. of concentrated brine is added with constant stirring; a flocculent precipitate soon forms and is separated by means of a cloth filter, slowly pressed, and cut into tubular shape. In this way about one-fourth of the total quantity of proteid in soya beans is obtained in the tofu. The brine employed is made from sea-water, and it is to the potassium and magnesium salts contained in this that the precipitation of the tofu appears to be due. Wherever rice forms the principal food of man, as in China and Japan, the addition of some other food rich in nitrogenous matters, or proteids, is necessary to make up for the deficiency of proteids in rice. The people of the sea coast supply this want by the use of marine animals, whilst inland the seeds of various leguminous plants, and notably the soya bean, are employed, as beef and other meats have only recently come into use. Tofu, therefore, may be regarded as a kind of vegetable beef prepared artificially from a plant product, and, when consumed in conjunction with rice, filling the rôle of a nitrogenous or proteid food in the presence of a larger quantity of a carbonaceous one.

ADULTERATION PROSECUTIONS.

"FILLED" CHEESE.

At Cambridge, on Tuesday, George Sodgroves, of 16a, Temple-street, Dalston, London, was summoned for selling cheese which was unfit for human food in the Cattle Market.—Defendant pleaded guilty, but said that he did not know the cheese was bad. It was sold to him as old cheese, and he thought he could sell it.—The Town Clerk prosecuted.—William Tias Taylor, Sanitary Inspector, said on Monday, February 10th, he was in the Cattle Market. He saw the defendant sell two or three pieces of cheese. He was selling cheese at 2d. a pound, and was telling people that it was their only chance to purchase it at the price. Witness tasted the cheese, and from the taste and aroma came to the conclusion that it was bad. He purchased some cheese, and paid 6d. for it. Defendant said he was not selling it as cheese, he could not do it at the money, but was selling it as "filled-American." He afterwards returned and seized all the cheese. He took it to the Medical Officer of Health, and it was subsequently condemned by the Mayor. He seized five cheeses of about 40lbs. each.—Dr. Anningson, medical officer of health for the borough, said he gave the inspector a certificate to the effect that the cheese was unsound and unfit for human food. This was not cheese, it was filled American cheese, which bore the same relation to ordinary cheese that margarine did to butter.—Replying to the Bench, Dr. Anningson said it was impossible to say what the cheese was made of. It was so altered in character.—By the Chairman: He should call it dangerous as food.—Mr. J. West Knights, public analyst, said he received a sample of the cheese for analysis, and gave a certificate to the effect that the sample contained moisture 25·13 per cent., fat 26·43, curd 44·77, and salt 3·67. Of the 26·43 per cent. of fat, 20 per cent. consisted of foreign fat not obtained from milk. The curd was in a decomposed state, and unfit for food.—By the Chairman: The curd had entered into a putrefactive fermentation instead of a lactic fermentation. It would undoubtedly injure the person who ate it.—Defendant said that he did not call the cheese the best of cheese, and the people bought it of their own free will.—The Chairman said the magistrates considered the case a very bad one, and it was made worse from the fact that it was not more than three months since the defendant was convicted of the very same offence, and fined £5, which he paid.—He was fined £15 and £3 3s. 6d. costs, or two months' imprisonment.—Defendant asked for time.—The Chairman: I would not give you a moment myself, but I will ask the other magistrates.—The Bench refused to give time, but defendant was told that if the money was paid to the governor of the gaol he would be liberated.

MEAT.

At Clerkenwell, on February 25, Robert Isaacs, a farmer, of Scedington, Lincolnshire, was summoned by George Billing, sanitary inspector of the Holborn District Board of Works, for depositing for sale at 99, Charterhouse-street, St. Sepulchre, four quarters of beef which were unsound and unfit for human consumption. Evidence was given that the meat was seized and condemned by the magistrate at the police-court.—For the defence it was stated that the meat was not sent up to London for human consumption, but for cats' meat. The animal accidentally broke its leg, and had to be killed.—Mr. Bros said the lowest penalty he could inflict was £20 and costs. It was a bad case.

BAD MEAT AT GRIMSBY.

At Grimsby, on February 27, Charles Jackson, butcher, of 39, Yarborough-street, was charged by Inspector Henry Fred Moody with having diseased meat on his premises which was intended for human consumption.—Mr. Henry Fred Moody said on the 8th of February inst. he visited the defendant's slaughter-house, and found hanging up three sides of beef, a head of a beast, and also the lungs of a beast. One of the sides of beef was apparently unwholesome, and the other two sides of beef were apparently from a carcass of an animal suffering from a wasting disease. The meat was soft, clammy, very wet, and absolutely devoid of fat altogether. On the head there was a tubercle in one of the glands of the neck. The lungs, which the defendant admitted came from the same animal as the sides and head, were one mass of tubercles, the left lung having a very large abscess which would weigh some pounds. Altogether the lungs stank very badly. Afterwards Dr. Newby, the Medical Officer of Health, came in—defendant walked into the slaughter-house about the same time—and examined the sides of beef, the head and lungs. Defendant was asked whether he knew that the meat was diseased, and he said "No; but he thought the beast had had a bad cold." The animal had suffered from what was known amongst butchers as the grapes. The meat was dressed in the usual way.—The defendant was fined £7 including costs, or in default one month.

HARD SWEARING IN A DISEASED MEAT CASE.

At Birmingham, on February 28, Richard Sargeant Turner and Martha Turner, trading as Turner and Sons, wholesale meat sales-

men, Smithfield Yard, were summoned for depositing in their slaughter-house the diseased carcass of a pig for the purposes of sale. The female defendant did not appear. Mr. Hiley prosecuted, and Mr. McCardie defended.—Inspector Hothersall said that the flesh of the pig was yellow, and was covered with red spots, the pig having evidently suffered from jaundice. In cross-examination, witness admitted that the carcass of the pig was hung in close proximity to the carcass of a sheep which defendants were in doubt about and had invited him to inspect.—Dr. Hill (medical officer of health) gave evidence.—Several witnesses were called who swore that the carcass was put aside for inspection, but admitted that the pluck had been thrown amongst some others. They said that the inspector's attention was called to the pig.—The inspector was recalled, and denied this.—Mr. McCardie: You suggest they committed perjury? Hothersall: I don't suggest; I am positive they have committed wilful and corrupt perjury. My attention was not called to the pig; in fact, the defendant's father wanted to test its fitness.—A fine of £10 and costs was imposed.

AMERICAN BACON AS IRISH.

The Oxford magistrates were occupied for several hours on Friday, 21st ult., in hearing seven summonses taken out by the Board of Agriculture against Oxford grocers and provision dealers for offences under the Merchandise Marks Amendment Act, 1894, in selling hams and bacon of a quality other than that represented. Inspector Moore, of the Bacon Curers' Association of Great Britain and Ireland, said that he purchased the goods, which were represented either as English or Irish, but which were in reality American. A fine of £5 in each case was imposed, and the costs were divided *pro rata* between the defendants.

MARGARINE.

At Belfast, on Feb. 25, William Smith, provision merchant, North-street, was summoned by David M'Master, inspector under the Food and Drugs Act, for having sold margarine as butter, and for having supplied margarine in a plain wrapper. The first summons was brought under the Food and Drugs Act and the second under the Margarine Act. Mr. A. J. Lewis prosecuted for the Corporation, and Mr. William Harper appeared for the defendant. The inspector stated that on the evening of the 18th January he sent a woman into the defendant's shop to purchase certain articles. When she had been there for some time he went in and took possession of a parcel she had in her hand. He then told the shopman who he was, and that he had sent the woman in to buy the butter. Witness asked permission to divide it into three, and the assistant asked him to take it round to the store to save the exposure. Mr. Smith followed him there, and, after learning what had taken place, admitted the substance was not butter, but that it was a mixture. He asked witness to let the matter drop, and that if so he would do as much for him again. Witness replied that he could not do so. The analysis by Professor Hodges showed the substance to be margarine. On the window of the shop there was a large label entitled "Ballyclare butter, 1s. per lb." For the defence it was stated that the shopboy had given the substance in mistake for butter. The Chairman said that they considered the case a bad one. They would put on a fine of £5 and costs, which would cover both cases.

SPIRITS.

At Abbeyleix Petty Sessions, on February 15, Colonel Poe, chairman, Acting-Sergeant Forbes, inspector under the Food and Drugs Acts, prosecuted John Kelly, Ballinakill, for selling whisky 29 deg. under proof, as certified by the county analyst, Sir C. Cameron. The defendant did not appear, and he was fined £1 and costs.—The same complainant prosecuted Thos. Grace, of Ballinakill, for selling on January 16, one half-pint of whisky 37 deg. under proof, as shown by the analyst's certificate. Mr. Waldron, solicitor, defended, and urged as a defence that the keg in which the spirits was conveyed had got injured, and in some mysterious way the water had got into the whisky. The magistrate, however, was of a different opinion, and commented strongly on the case, for which he fined the defendant £2 and costs, and threatened to endorse the conviction on the Excise license.

At the same Petty Sessions, on February 29, the same inspector prosecuted Patrick J. Byrne, grocer and druggist, Ballinakill, for selling, on January 16, three glasses of sweet spirits of nitre adulterated with 25 per cent. of water. The analyst's certificate said the sample sent by the inspector was spirits of nitrous ether adulterated with 25 per cent. of water. The defendant had also sent his sample to Dr. Tichbourne for analysis, whose report agreed in the main points with that of the County Analyst. Mr. O. C. Fitzsimmons, who defended, pleaded that the case should be dismissed, as it was through age it had got to be an inferior article. The magistrates, however, fined him 5s. and costs.

DR. TEED ON THE WATER-AT-SPIRIT-PRICE SWINDLE.

MR. TEED, the public analyst for Camberwell, has reported, *inter alia*, as follows to the Vestry: "I am informed that in one of the

diluted spirit prosecutions the summons was dismissed on the ground that a dilution notice was exhibited, not in the bar where the sample was purchased, but in another bar of the same public-house. The question of these dilution notices has always been a pressing one, and this recent decision accentuates the position. In my last report I referred to some possible remedies, but I cannot, in the face of this decision, refrain from once again drawing your attention to the matter, with the view that a remedy may be found. The course of action I ventured to recommend when last on the subject was for the Vestry to consider whether they should not instruct their solicitor to enter opposition to the renewal of the licenses of all houses where dilution notices were exposed, on the ground that the holder of the license was not carrying out the conditions of his license, one of which is to supply the public with spirits, when, by his own showing, he was only supplying them with spirits and water."

The report was referred to the Sewers and Sanitary Committee for consideration.

COMMENDING A SANITARY INSPECTOR.

At the last meeting of the Camberwell Vestry Mr. Woodmansee, by leave of the Vestry, mentioned the conviction of a man for exposing meat for sale that was unfit for human food, and moved that Mr. Homer, the sanitary inspector who conducted the prosecution, be called before the Vestry and publicly commended. He said that Mr. Homer carried out duties of some danger, and he thought that officer ought to receive due recognition from the Vestry for the satisfactory manner in which he performed his work. Mr. Fosten seconded, and Mr. Helby (on behalf of the Sewers and Sanitary Committee) said they should be glad if Mr. Homer was commended for the manner in which he discharged his duties. Mr. Moss supported the motion, which was carried. Mr. Homer was then called in, and the chairman, in well-chosen terms, expressed the appreciation of the Vestry that he had carried out his duty with zeal as well as discretion.

FOOD AND ADVERTISING.

DR. HALLIBURTON has had occasion to object to the methods of those concerned with the sale of "Nutroa Food." He writes:—

My attention has been called to an advertisement in pamphlet form of a food called "Nutroa" which is stated to have the same composition as my "ideal diet for children." I wish to state (1) That the use of my name in these advertisements is without my sanction; (2) that the expression "ideal diet for children" has never been used by me in any of my writings; and (3) that the figures quoted are taken from my work on Chemical Physiology, which gives the average minimum diet (a very different thing from ideal diet) for persons of different ages. The figures selected by the advertisers are those for children between the ages of six and fifteen; the entirely different figures given on the same page for infants under the age of one year and a-half are ignored. Nutroa Food is advertised as a substitute for human milk, and therefore presumably intended for those under eighteen months of age. I may state in conclusion that since seeing the advertisement I have examined a sample of this food, and that I do not consider it in any sense a substitute for human milk.

—Yours faithfully,

W. D. HALLIBURTON.

King's College, Feb. 21, 1896.

REPORTS AND ANALYSES.

"KURRUWA" TEA AND COCOA.

TEA-DRINKERS who wish for really choice teas of delicate aroma and flavour cannot do better than buy those sold by the Kurruwa Association, 2, Idol-lace, E.C. Our preference has always been for China teas, but the rapid growth of the Indian and Ceylon tea trade has made it difficult for many who prefer China teas to obtain the genuine article. The Kurruwa Association supply five qualities, at 1s. 6d., 2s., 2s. 6d., 3s., and 4s. per lb. All are excellent value, and it would be hard to match the higher priced ones in flavour and aroma, the 4s. tea being really delightful.

The same firm supply cocoa of a high quality, free from starch or any adulterants, and having the excess fat expressed. It is a very excellent and palatable cocoa.

CORRESPONDENCE.

ADULTERATION PROSECUTIONS.

To the Editor of FOOD AND SANITATION.

SIR,—You publish in your edition of the 4th Jan. last the usual list of Adulteration Prosecutions, and wind up with a scathing remark implying fraud to all the dealers in the articles referred to. No doubt you have culled your list from other publications throughout the country, and you are unable to judge the merits of each individual

case, and, in company with other readers, gather an erroneous impression, although there may be very exonerating circumstances in many cases, and technical offences only committed.

Take for instance the last of the list, viz.:—Mr. George Webber, grocer, Hotwells, Bristol. Mr. Webber is a well-known and highly respectable tradesman of some 30 or 40 years standing in the Hotwells, Bristol, and has never before been fined, and would be judged by all who know him to be incapable of defrauding anyone. I happened to be in the shop when the Inspectors demanded samples of the article in question, and I am prepared to swear that the label stood midway between, resting on the two dishes on which the Margarine was placed. Mr. Webber's niece being of a nervous disposition, hurriedly served the Inspectors, and inadvertently wrapped the parcel in a plain unstamped paper contrary to his custom. There was clearly no intent to defraud here, and yet Mr. Webber has to bear the stigma of a published fine out of proportion to the offence. It is doubtless the business of an Inspector to obtain convictions if possible, especially if he is paid by results, but to take advantage of so obvious an error through inadvertence is clearly not what the Act was passed for, and if the defendant had thought sufficiently serious of it to have employed the solicitor to the local Grocers' Association, of which he is a member, and which he ought to have done, the result may have been different. The Inspectors usually pounce upon some small shop-keeper, who commits some technical offence through ignorance or inadvertence, and a conviction is often obtained through the defendant not sufficiently realising the importance of making good his defence. The Bristol Grocers' Association could give you a good deal of information as to the unsatisfactory way some of these prosecutions are conducted, and are even now taking steps to protect themselves from what is in many cases very unfair proceedings.

Even with English produce neither the analyst nor the authorities who administer the Act can give the desired information as to what should be the standard of pure English butter, and there have been many convictions on the insufficient grounds that the article does not reach the standard by so much per cent. what it should be, and sold in all innocence by the grocer, while all the time you can't find out what the standard is.—Yours truly,

COMMERCIAL.

THE SELECT COMMITTEE ON ADULTERATION.

THE Committee on Food Products Adulteration has been selected as follows:—Captain Bagot, Mr. Bolitho, Mr. Causton, Mr. Channing, Mr. Colston, Mr. Fry, Mr. Jeffreys, Mr. Kearley, Mr. Kilbride, Mr. Lambert, Sir J. Long, Mr. P. A. M'Hugh, Mr. Newdigate, Mr. Nicol, Mr. Herbert Roberts, Mr. T. W. Russell, Sir M. Stewart, Mr. Willox, and Mr. Yerburgh.

THE SANITAS CO., LIMITED.

THE directors of this company recommend a final dividend of 1s. and a bonus of 9d. per fully-paid share, making, with the interim dividend, a total distribution of 13 $\frac{3}{4}$ per cent. for the year ended December 31.

UNIQUE "SHERRY."

ADULTERATION seems hardly the word to describe the little trade trick reported to the Local Government Board as described in the new report of that department just issued. A sample of British Sherry, so-called, was in question, but the analyst could not say the sherry was adulterated, since there was no sherry there. The only resemblance the mixture had to sherry was its colour. It did not even contain alcohol. It was "composed of sugar, a little essence, and bisulphide of soda." For the adulteration of food and drugs there is still a large field, thanks to the supineness of many of our borough and county authorities. The Local Government Board's report states that there are thirty-seven districts with an aggregate population of nearly two millions where the Sale of Food and Drugs Acts are entirely, or almost entirely, ignored. The appointment of an analyst is in itself a protection to a community. In the towns where samples are taken for inspection the number condemned as adulterated is diminishing year by year. Pepper, once a favourite article with the adulterator, may now be bought with more confidence. Out of sixteen hundred samples tested, only ten were condemned. Ten per cent. of the coffee sampled is

still found to be wrong, but the average for ten years after the passing of the Act of 1875 was 18 per cent., so that the taste in coffee, or the honesty of the coffee dealer, or the fear of the inspector, must be different from what it was. A sample of tea condemned for containing an excessive quantity of mineral matter (including minute particles of glass), straw, woody fibre, and other things suggestive of shop sweepings, appears to have been unique.

FROZEN FISH.

DURING the past year considerable quantities of frozen fish, chiefly haddock, have been sent regularly from Hammerfest to Hamburg, where they have been sold at very cheap rates.

On account of this, the German Minister of War has caused experiments to be made with a view to ascertaining the nutritive value of Norwegian fish as a article of food for the regiments of the Guard at Berlin.

The men have been fed once a week, says the *Chef*, on haddock and potatoes, and while the soldiers themselves are reported to have liked this description of food, the doctors have watched the experiments, and have reported favourably upon the results of their investigations.

In consequence of this, the Minister of War has, therefore, given orders that in all the garrisons in North Germany, during the winter season, Norwegian haddock shall be eaten for dinner two or three times a month.

THE SYMPTOMS AND DIAGNOSIS OF THE INDIGESTION OF STARCHY FOODS.

BY REYNOLD W. WILCOX, M.D., LL.D. (of New York).

Professor of Clinical Medicine and Therapeutics at the New York Post-Graduate Medical School and Hospital; Visiting Physician to St. Mark's Hospital.

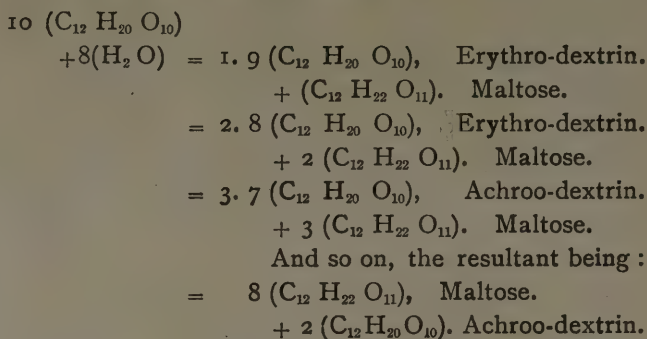
THERE are many reasons why the text-books are silent upon the subject of this paper. The ease with which the contents of the stomach can be examined, the accuracy with which the effect of pepsin can be estimated, the zeal and energy of the manufacturers of digestive ferments have placed our knowledge of gastric digestion in a very satisfactory condition. To one who will carefully study the accurate work of Hayem and Winter, and who will follow their teachings, the chemistry and physiology of the gastric fluids are well understood. Yet, after all, the gastric may be stated to be only the preliminary to duodenal digestion. And that gastric digestion is not even essential, is shown by observations of Czerny, who demonstrated that a dog could live for five months after his stomach had been removed.

The digestion of starches, it is well known, takes place in the mouth and in the intestine. The older physiologists were of the opinion that the digestion of starches came to an end in the stomach. Kellogg, however, has shown conclusively that starch digestion can go on, under certain conditions, in the stomach. One hundred and forty-nine cases in which starch digestion was especially studied, complete conversion was found in 2 per cent. The conditions under which this is brought about will be considered at a later period.

Starch digestion, according to Brown and Heron, may be represented as follows—

One molecule of gelatinous is converted into n molecules of soluble starch.

One molecule of soluble starch—



We will now consider this digestion as it takes place at the various portions in the alimentary canal.

The term buccal dyspepsia has been used for more than a score of years. It was supposed to be characterised by insufficient nutrition, resulting in emaciation, abdominal distension, flatulence, and colicky pains, or abdominal distress, and was due to imperfect conversion of the starches in the mouth. Investigation subsequently showed that this imperfect conversion was but a part, and perhaps a minor part, of the causation, the more important being hasty mastication. The hasty mastication resulted in (1) imperfect breaking up of the starch grains, (2) deficient quantity of saliva, and (3) imperfect insalivation. Since the conversion of insoluble starch into soluble sugar depends upon not only a sufficient amount of saliva, but also upon trituration of the starch grains so that their capsules shall be thoroughly ruptured, and thorough mixture of the saliva with the starch, it can readily be seen how very important is complete mastication. With these three factors in full play, starch conversion is practically instantaneous. Naturally a considerable portion in this form of indigestion—so-called buccal dyspepsia—can be cured by eating more slowly, on the one hand, and by limitation of the starchy foods which are ingested, on the other. This cause of dyspepsia is far more frequent than it is popularly supposed to be, and the neglect to properly appreciate this etiological factor explains some of the failures in therapeutics of those who place great reliance upon the results of the examination of the stomach contents. The careless hurrying of the carbo-hydrates into the stomach without their being properly acted upon by the ptyalin of the secretions of the mouth is, as I have said before, a very important cause of dyspepsia. Lees has recently called attention to another prevalent error, which is frequently, I imagine, even encouraged by physicians. Too much amylaceous food is taken into the stomach soaked in tea, coffee, milk, beef tea, and other fluids. The result of this is that insalivation is not at all performed, and the ptyalin, quite likely deficient in amount from lack of mastication, is present in such small percentage that it is practically inoperative. The stomach is not expected to originate the digestion of starches; it may, and likely does, continue the process, when commenced in the mouth, for about half an hour. The natural inference from this is that fluids of any kind should not be used while masticating amylaceous food, and the patient should be restricted from the too free use of tea, soups with vegetables, puddings with milk or cream, or boiled farinaceous foods with the same. The results which are obtained in practice tend to show the correctness of the observation. When we consider that, depending upon the dryness and hardness of the food, from one to three pints of saliva are secreted daily, and that the percentage of ptyalin present (in mixed saliva) is according to Frerichs, .0141, the action of the hydrolytic ferment is by no

means insignificant. When, from the causes above mentioned, the amount of carbohydrate food daily ingested, which is necessary for an adult, varying, according to Parkes, from twelve ounces (at rest) to sixteen or eighteen ounces in laborious occupation (practically about two-thirds of the total food) is hurried into the stomach with but little conversion, the results to be expected in the intestines are not far to seek. What the effect of the presence of a large amount of unconverted starch in the stomach may be on gastric digestion, is not, so far as I know, determined, nor, indeed, is it within the scope of this present investigation to inquire.

In the stomach it is admitted that the action of the amylolytic ferment, ptyalin, may continue for about half an hour, its activity being finally checked by the fatty acids, or by the free hydrochloric acid, the latter even if in small quantity. On the other hand, it has been stated that when these acids are in organic combination they may favour starch conversion. Recognising the amylolytic changes by means of the iodine-iodide test (Lugol's solution; starch, blue colouration; erythro-dextrin, red or purple; achroo-dextrin, brownish; the sugar, maltose or glucose, being detected by Fehling's solution) Kellogg found in the series of cases above mentioned that the purple colour of erythro-dextrin was detected in 67.8 per cent., and the brown colour of achroo-dextrin in 17.4 per cent. The conditions under which this unusual digestion takes place are pronounced hypopepsia, or, to be more accurate, hypopepsia with hypo-acidity. In fact, the state of starch digestion may be a very good index of the degree of total acidity. When Lugol's solution gives a brown colouration or no reaction whatever, complete conversion of starch has taken place, and the presence of sugar can be confirmed by the strong reaction given by Fehling's solution. A suggestion may be entertained that the prompt conversion of the starch into sugar which takes place under these conditions may result in the rapid absorption of the digested starch so that the conditions are less favourable for the development of acid fermentation than in the presence of a large quantity of unconverted starch. With this observation by Kellogg, I leave the subject of starch conversion in the stomach.

The digestion of starches is resumed in the small intestine. Owing to the inherent difficulties of the subject the various processes have not been so thoroughly worked out. As a matter of fact, buccal and

gastric digestion are merely preparatory to the intestinal. In addition, here, proteids and fats as well as starches are digested, and failure in one direction must necessarily result in abnormalities in the other. In 1890, Boas attempted to study experimentally intestinal digestion in man. For this purpose he made use of vomited matter obtained by a reflux of the intestinal fluids into the stomach. He also made use of the stomach tube and of aspiration. Naturally, the irritation of the stomach tube, even if the stomach had been previously irrigated, would result in some gastric fluid, so that unmixed intestinal fluid cannot be obtained. The subject was experimented with while fasting, and the reflux from the intestines was favoured by his decubitus and by massage of the epigastric region. Although this method is not applicable to the study of intestinal dyspepsia in our patients, yet the observations of Boas had a certain practical value in that they demonstrated the influence of bad gastric upon the intestinal digestion. Perhaps the sole result of these experiments, so far as concerns starch digestion, is the statement that patients suffering from *hypochlorhydrie* do not suffer from intestinal troubles: in other words this is confirmatory of Kellogg's work, which shows that under these conditions starch is digested in the stomach, and the opportunity for intestinal disturbance from undigested starch is not presented. Another factor of importance in intestinal digestion is the presence of micro-organisms, whereas normal gastric digestion is probably free from them. The conditions favourable to the action of amylase are similar to those favourable to the action of ptyalin; namely, moderate heat, a slightly alkaline medium and removal of the changed material from time to time. The ferment in the pancreatic juice, distinctly amylolytic (amylase), cannot be distinguished from ptyalin. The digestion of starches results in maltose or glucose, the latter being always the final result. Obviously here we must consider that the effect of the pancreatic fluid on starch may be practically inhibited by the discharge of a large amount of acid fluid through a patulous pyloric orifice in cases of marked gastric acidity—another point at which gastric and intestinal indigestion approach. The *succus entericus* from Lieberkühn's glands is believed to convert starch into sugar, but under what conditions and to what extent physiological literature is generally silent.

(To be continued.)



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Food and Sanitation.

SATURDAY, MARCH 14TH, 1896.

THE "LANCET" EATS THE LEEK.

THE *Lancet* now realises that it made a woeful mistake when, on February 22, it had the audacity to question our exposure of its humbugging eulogies of Valentine's Meat Juice; and, when copying the style of the prize-fighting fraternity, it issued its challenge to us to appoint, with its approval, an analyst of well-known repute, etc., to prove the accuracy of the analysis we published of Valentine's Meat Juice.

In our issue of February 29 we showed that the challenge was an inane attempt to befog the question. We gave two separate analyses made for us of Valentine's Meat Juice, and clenched our castigation of the *Lancet* by publishing an analysis by Prof. Chittenden, which put the *Lancet* in a queer position. It is not a pleasant thing for us to have to accuse any journal of deliberate lying, but the following facts speak for themselves:—

In FOOD AND SANITATION, Feb. 29, we said:—

Mr. R. H. Chittenden, professor of physiological chemistry, Yale University, analysed Valentine's Meat Juice in May, 1891, and gave the results in a paper read before the Philadelphia County Medical Association, as follows:

VALENTINE'S MEAT JUICE.	
Water (at 110° c) -	60.31
Solid matter -	39.69
Inorganic constituents -	11.30
Phosphoric acid -	4.00
Fat (ether extractives) -	0.78
Soluble in 80 per cent. alcohol -	29.15
TOTAL NITROGEN -	2.68
Soluble Albumen coagulable by heat -	0.55
TOTAL PROTEID MATTER AVAILABLE AS NUTRIMENT -	0.55

The *Lancet*, March 7, says:—

Professor Chittenden's "recent" analysis was not made for FOOD AND SANITATION. Its source is not acknowledged by FOOD AND SANITATION in its article of the latest date, but it will be found with a complete table in an address on the Nutritive Value of Beef Preparations read by the author before the Philadelphia County Medical Association, in May, 1891.

Our readers will see that we did clearly acknowledge the source of this analysis, and that the *Lancet's* statement is an impudent fabrication. As to the eight other preparations, we were not dealing with them, but with the *Lancet* and Valentine's Meat Juice, which the *Lancet* declared was as follows:—

VALENTINE'S PREPARATION OF MEAT JUICE.—Not only is the flavour of the meat admirably preserved, but the albumen of the juice is retained in perfect solution, as is proved by the ease with which it coagulates on boiling or mixture with dilute nitric acid. The preparation is, therefore, most valuable both as a stimulant and food, and we have no hesitation in recommending it highly.—The *Lancet*, London, December 28, 1878.

We protested that this assertion of the *Lancet* was humbug, and as the *Lancet* does not dare to controvert Professor Chittenden's analysis, but evidently accepts it as beyond its powers to refute, we need only say that according to Professor Chittenden's showing the total nutrient matter in Valentine's Meat Juice was 0.55, a little over half of one per cent., whilst that of Johnston's Fluid Beef, i.e., Bovril, was 9.12. A journal like the *Lancet* ought at least to have someone capable of making an ordinary calculation, and the figures the *Lancet* publishes show that ordinary Bovril had over 16 times the nutrient value of Valentine's Meat Juice. This, it will be noted, was only ordinary Bovril as sold at refreshment buffets. Invalid Bovril, as our issue of Dec. 14 last showed, has a far higher percentage of nutriment. In Feb., 1895, it had 23.87 per cent. of albumenoids and peptone (with a small quantity of gelatine), showing that it was about 40 times more valuable as a nutrient than Valentine's Meat Juice. Since then Bovril has been further improved, as shown in our issue of Dec. 14, 1895. Having thus proved the utter worthlessness of the *Lancet's* defence, and exposed its shuffling, we will frankly tell it why we consider its challenge bunkum. We should not do so had not the *Lancet* sought to discredit the accuracy of the analyses we published. That made in January, 1893, was by Mr. Otto Hehner, and was not made for us with any intention on our part of exposing the *Lancet*, or commenting on Valentine's Meat Juice, but because that preparation had been given to James Maybrick as a nutrient, and, as we have long entertained doubts as to his wife's guilt of intent to murder her husband, we thought we should like to know its exact constituents. Mr. Otto Hehner, past president of the Society of Public

Analysts, found that Valentine's Meat Juice had the following composition:—

Water	55 24
Ether Extract	4 80
Gelatine and Albuminoids	0 93
Peptone	1 55
Creatine and Meat Extractives	18 27
Salt	2 62
Other Mineral matters	8 51
Non-Nitrogenous Extractives	8 08
	<hr/>
	100 00

The results so surprised us that we thought they should be known to the medical profession, but to satisfy ourselves beyond question that they were beyond disproof we had a further analysis made in May, 1895, which showed the preparation was about the same as was the case in January, 1893, the date of the first analysis. We would not insult Mr. Hehner's unquestioned pre-eminence in the analytical world by supposing that anyone connected with the *Lancet* or who would, forsooth, meet with the *Lancet's* approval, would have the ability to correct, or disprove the accuracy of, an analysis made by Mr. Hehner. The second analysis was directed solely to discover if there had been any change for the better in the nutrient value of Valentine's Meat Juice, and the following was the result:—

Gelatine	0 62
Peptone	2 93
Albumen	0 10

i.e., the actual amount of albumen yielded was only a tenth of one per cent.

Having thus convicted the *Lancet* on all counts, we must deny *in toto* the *Lancet's* smug assumption that it is a "superior journal." Mr. Pecksniff was superior until he was found out, and if there be any superiority about the *Lancet* it lies in the strength of its advertisement pages, which may explain the weakness of its analyses. The *Lancet* moans we do not know how to conduct a controversy. Like Sir Andrew Aguecheek, our contemporary doubtless feels inclined to exclaim, "Plague ont! an I had known he had been valiant and so cunning in fence, I'd have seen him damned ere I'd have challenged him;" and had the *Lancet's* challenge and tone not been designedly offensive, we would have shown it more mercy, for we willingly recognise that the *Lancet*, outside of its analyses and wretched Lamp Explosion Commission trash, has done some admirable work, and that if its editors be not extra intelligent they are in the main well meaning. It is not the fault of the present proprietors of the *Lancet* that the methods and practice of its founder, whose biography the *Lancet* is now publishing, were outside the pale of decency, and that Thomas Walkley should have attempted vainly to blackmail the firm of Messrs. Joseph Travers and Sons. In their kindness of heart Messrs. Travers allowed their baffled visitor the option of going out, being thrown out, or given into custody, and in their kindness of heart again they might accede so far to the prayer of the descendants of the late Thomas Walkley as to allow that person to be placed on a pedestal as an embodiment of all the virtues, but the heads of the firm of Joseph Travers and Sons, Limited, are well aware that what we state is the absolute truth, and we believe they have too great a regard for the truth to violate it, even to suit the *Lancet*. As to being authorised by them to state this fact that is another matter entirely. We are not the slave or servant of anyone, that we should ask authority to write the truth.

The *Lancet*, however, need not be downhearted, for they are not alone unhappy in the character of their ancestry. Did not the Marlborough dukedom have its rise in a sister's harlotry—and who to-day despises the Bedfords and the like the less because they are the offspring of prostitution? We can assure the *Lancet* we do not despise it; we find much to admire in it from

time to time, and only regret that in analyses it affords so pitiable an example of waning faculties, for it is very sad to be possessed, as our contemporary is, of a squinting memory, a stumbling will, and a paralysed understanding upon analytical questions.

It will, however, show wisdom if it refrain from ever again daring to question a statement we make, for we have many leeks larger even than those we have already made the *Lancet* eat, and if we swear we'll make the *Lancet* eat them, it may make up its mind that, like King Hildebrand, "Devil doubt we'll do it." In conclusion, if veiled intimidation of business firms is to be a part of the *Lancet's* arguments, the sooner it learns how to conduct a controversy decently the better. The following remark in the *Lancet's* last issue is sinister:—"The proprietors of Bovril, a preparation of which we have had on several occasions to speak in terms of well deserved praise, will take nothing by the ill-judged advocacy of our contemporary."

We thought the *Lancet* claimed to judge everything on its merits, and would point out to our contemporary that it is scarcely the thing to threaten some other person with punishment, because the Editor of this journal has made the *Lancet* eat the leek.

INADEQUATE MEAT INSPECTION.

It speaks well for the zeal and efficiency of Sanitary Inspectors that scarcely a day passes without a prosecution for diseased meat, but as it is notorious that the number of Sanitary Inspectors in the large majority of places is quite inadequate for the work that is to be done, it is fair to assume that the seizures represent only a small portion of the diseased meat which is used for food. In saying this, we make no reflection upon butchers as a class, for many thousands of conscientious, honourable men who follow that trade are keenly anxious that the black sheep of their calling should be detected and punished. Not that all the black sheep are butchers. That precious pair of scoundrels, John Munro and Alexander Munro, who faked up rotten corned beef, potted beef, salmon, lobster, rabbit, etc., into various highly-spiced luncheon delicacies, and are now serving six months' hard labour each, thanks to the vigilance of the Mile End sanitary officials, were not butchers, albeit the thoughtless spoke of the case as another revelation of the iniquities of the butcher's trade. The pork-pies which caused so many poisonings in the Midlands about a year ago were not made by butchers, but by a firm of specialists in the manufacture of that article. Butchers would welcome a far more rigorous inspection of the many places where potted meats, pies, "bags of mystery," etc., are prepared than is at present the case, and it would be an enormous saving in health and wage-earning power to the public were such inspection made compulsory throughout the United Kingdom. Mansfield affords a case in point, which our contemporary, the *British Medical Journal*, thus comments on in its last issue:—

Between February 12 and 16 about 150 persons in Mansfield and its neighbourhood were attacked by an acute illness, the chief characteristics of which were severe diarrhoea, vomiting, and collapse, accompanied by headache, general muscular pain, and some febrile disturbance. A detailed investigation of the circumstances of the outbreak has been undertaken by Dr. Wills, the Medical Officer of Health for Mansfield, and the outbreak has been made the subject of a special inquiry by a medical inspector of the Local Government Board. It has, we understand, been ascertained already that in almost every case the person attacked had consumed a certain potted meat, a quantity of which had been prepared a few days previously and supplied to various shops where it was retailed. The time which elapsed between eating this meat and the first symptoms of illness is stated to have varied in different cases; in many it was as much as twenty-four hours, and in some more. In this respect the outbreak at Mansfield is in agreement with what has been observed in other cases in which a large number of people have been made ill by eating

meat which it is to be presumed must have undergone some peculiar change probably due to bacterial action.

On the Continent, far behind us as they are in many matters of hygiene, they are, as Dr. Legge recently declared, twenty years in advance of us as regards systematic meat inspection. Paris, for example, had, in 1890, fifty-seven meat inspectors; whilst London, with about twice the population of Paris, has perhaps a dozen all told, of whom half-a-dozen may devote their whole time to the work. Is there any cause for wonder that we have malpractices going on like those of the Munro's, and that we should have periodically cases like this at Mansfield? What are they but the direct outcome of our policy of starvation of sanitary inspection? Some of the more enlightened authorities, such as Islington, have appreciated this, and have not hesitated to substantially increase their staff of inspectors. The public would be vastly benefited, and disease, suffering and death be materially reduced were every local authority in the kingdom to follow Islington's example, for the wisest spent money is that devoted to protecting the health of the people. How prevalent the sale of diseased meat at present is the following cases, all of which occurred during the past few days, amply prove.

At Wellingborough, on March 6, Mr. G. Bayes, sanitary inspector, caused the London Central Meat Company, 128, Derby-road, Bootle, to be summoned for exposing for sale unsound meat at Irthlingborough on February 25.—Mr. Willan Jackson prosecuted on behalf of the Rural District Council, and Mr. Tyler, of Birmingham, defended.—Mr. Georges Bayes, sanitary inspector, stated that whilst at Irthlingborough on the day in question he passed the shop in the occupation of the London Central Meat Company. He noticed that the meat in the window looked a very bad colour. It was ticketed 4d. per lb. There was a heap of meat on the back of the counter ticketed 3d. per lb. He went into the shop and called the attention of the salesman to the meat on the board, and asked him if that was the price, 3d. per lb. He said "Yes," and witness then went to the meat and inspected it. He told the salesman that the meat was stinking, but he said "No it isn't. I cannot smell it." Witness told him he should seize the meat, as it was unsound, unwholesome, and unfit for food. He selected 12 pieces of meat and told the man to weigh the meat. It had a green appearance. The meat ticketed 3d. per lb. weighed 24lbs., and the 12 pieces cut of the window weighed 36½lbs. He wrapped both lots up, put them in his trap, and conveyed the meat to Wellingborough. The Bench found the company guilty. The Chairman said they were unanimous in recording a conviction in this case, and looked upon it as a serious one, because there had been a previous conviction against the same company 18 months ago, when they were fined £20. The public must be protected, and the company would now be fined £75 and costs, £1 13s.

Had it not been for the vigilance of this sanitary inspector the meat would, no doubt, have been disposed of for human food in some form, and we are glad to see the public recognising, although somewhat slowly, that such vigilance is worthy of appreciation. For instance, the Poplar Board of Works at its last meeting read

a letter received from the Poplar Labour Electoral League, conveying the appreciation of the members of the services of Mr. Raymond, sanitary inspector, and Dr. Talbot, the medical officer, in the case of the recent seizure of bad meat in Old Ford, and expressing the hope that the example made of the defendants would act as a deterrent to others who have traded in such "poison for the poor." Mr. Godfrey moved that a copy of the letter be sent to the officers concerned, remarking that it was not often such appreciation was shown of the work of the officials. Mr. Muggleton seconded the motion, which was carried.

At Kidderminster, on March 6, Mrs. Adeline Needham, butcher, of Coventry-street, was charged with having exposed a piece of unsound beef for sale. Mr. Morton, town clerk, prosecuted, and Mr. Spencer Thursfield defended.—Mr. Cowderoy, inspector, said he seized 8lb. of beef, which was quite unfit for food.—Mr. D. Corbet, medical officer, described the meat as stale, stinking, and offensive.—The defence was that the meat was quite fit for food.—A fine of £1 1s. and costs was imposed.

At Clerkenwell, on March 9, Gottlieb David Link was summoned by Sanitary Inspector Billing, of the Holborn Board of Works, for exposing for sale, at 2 and 3, Cowcross-street, four quarters of beef, which were unfit for human consumption. Mr. Matthew Hale prosecuted, and Mr. Ricketts defended. On January 24, the inspector saw the quarters hanging outside the defendant's shop. Owing to the peculiar "dressing" of the meat he examined it, and found some of the internal parts had been removed—an unusual circumstance. Witness found traces of tuberculosis in the meat, and consequently seized it. The defence was that the defendant's servant hung the quarters up in the absence of his master. They came up from the

country ready dressed. The magistrate imposed a mitigated penalty of 20s, the defendant being responsible for the act of his servant.

At Bolton, on March 9, Robert Anderton Hulton, a butcher, of Little Lever, was charged at the instance of the Urban District Council, of Little Lever, with preparing unsound meat for sale. The defendant was fined £10 and costs, he having been previously convicted.

Surely ample proofs of the dangers of inadequate meat inspection.

SANITARY INSPECTORS' GRIEVANCES.

WE were glad to find that, in the flood of oratory poured upon sanitary inspectors at their annual dinner on Saturday last, three questions which, in our opinion, should be put forward with tireless energy, were not ignored. We refer to fixity of tenure of appointments, increased salaries, and superannuation. The reason and justice of each of these claims are so well known to sanitary inspectors, that they might easily fall into the mistake of believing their grievances must be equally well known to the public and to legislators. Unhappily, however, a question must involve some great political issue before our Members of Parliament will study it of their own accord; and these grievances of the sanitary inspectors require to be pointed out again and again to the press, to the Local Government Board, and to that Board's master—Parliament. However just a demand may be, it stands scant chance of being listened to without patient, persistent agitation, and it is to the credit of the Association that so many distinguished men on Saturday evening cordially endorsed the plea of the sanitary inspectors for fair treatment.

Dr. Shirley Murphy's cogently-reasoned and ably-phrased speech was in itself an irrefutable argument for equitable treatment being meted out to sanitary inspectors. What could be more telling than his lucid exposition of the monetary benefit the community has reaped by diminution of sickness, and longer life and opportunity for work and making provision for those near and dear? The soldier, the policeman, the civil servant, after a certain period receive a pension. Equally with the first, and far more than the last, does the sanitary inspector merit a pension, for, like the soldier, he carries his life in his hand, but in a nobler cause, for his mission is to banish disease, pain, and misery, and to reduce death's tax on humanity. The sanitary inspector must face fever, smallpox, and other malignant diseases, and run the risk of infection and death in striving to prevent the terrible scourges spreading through whatever district he may be in charge of. He does this for a miserable wage, in some cases as little as twenty shillings a week, whilst the ablest-trained inspectors, who have passed examinations in sanitary science, are lucky if they can get £150 per year. Those who may get that salary have ever a Damocles sword hanging over them, for if they are fearless in the performance of their duty, they can scarcely escape coming into conflict with some member of the Board or Vestry they serve, and find that Jerry Builder, Esq., and Mr. Slum-Property-Owner are powerful enough to secure their immediate dismissal. From the point of view of public health, this is as dangerous as it is unfair. We know instances where bribery or favouritism secures contracts of boards, vestries, and town councils for swindling disinfectants, but woe betide the sanitary inspector who dared to object to such disinfectant being used, albeit he might be absolutely convinced of its worthlessness to inhibit the development of disease germs or destroy existing ones. It is in the interest of the public themselves that sanitary inspectors should have fixity of tenure in their appointments, subject to dismissal only by the sanction of the Local Government Board. At present, the sanitary inspector is at the mercy of what may easily be, and too often is, a tainted tribunal, and as his work is so liable to arouse

enmity, it is but bare justice to place between him and such enmity an impartial tribunal like the Local Government Board.

We consider that referendum to the Local Government Board would have something to say about the question of the action of the Bermondsey Vestry, which we wrote of in our issue of December 21 last. This Vestry has made a farce of the Adulteration Acts for years, and is practically in the grip of a certain class of traders, and its members apparently "compound for sins they are inclined to, by damning those they have no mind to." They object to a sanitary Inspector asking the price of any property, or negotiating the sale of property, possibly because they think it might interfere with their "making a bit," for it is new doctrine to us that because a man happens to be a Sanitary Inspector he is sealed, quoted and signed by the hand of nature to neither buy nor cause to be bought any property, or make a profit therefrom even in the hours when he is off duty. We understand that this Vestry at its last meeting had six candidates before it in response to an advertisement for a Sanitary Inspector, and that the one selected, on being informed of the conditions, refused the appointment. The Vestry then offered it to another of the applicants, but all refused to accept the position unless under the protection of the Local Government Board. This fair request was declined by the Vestry, though why it would be hard to say, unless these "burkers" of the Adulteration Acts want only officials whom they can terrorise. There were many serious questions dealt with in the able and beautiful address delivered by Sir B. W. Richardson, who pointed out

"There was no country in the world which could boast of such a body of useful servants as England possessed in her sanitary inspectors, who dealt only with the one important subject of improving the health of the country. He had looked with increasing and continued gratification upon the progress which their association had made. They wanted somebody to go into the dark places of the world to see where lay the cause of disease, and they might feel sure as they did that, so they came nearer to getting a land in which there should be no disease at all. Disease was quite an accident. There should be no occasion why any person should die of disease in a civilised land. It came from accidental causes, and was removable by the efforts they were making to remove it—by taking care of the living, and also by taking care of the dead. The care of the dead he looked upon as one of the great points in the evolution of sanitary education. Sanitary inspectors as a body were underpaid, but the world could not now do without a complete body of sanitary inspectors, and when the necessity of their work came properly to be recognised by the nation he felt sure they would receive an adequate reward."

There were over 250 persons present, including Mr. Sheriff Cooper; the Archdeacon of London, General Moberly, Mr. Wyke Bayliss, president of the Royal Society of British Artists, Professor D. E. Hughes, Dr. Fletcher Little, Dr. Shirley Murphy, medical officer of the London County Council, Dr. A. Downes, Dr. J. Priestly, Mr. F. O. Crump, Q.C., Mr. C. W. Raymond, Mr. H. Alexander, Mr. E. Tidman, honorary secretary, Mr. M. Henry, FOOD AND SANITATION, and the Chairmen of the principal London Vestries and Boards of Works.

SHOULD THE BRITISH PHARMACOPŒIA TO BE USED AS A STANDARD UNDER THE SALE OF FOOD AND DRUGS ACTS?

By J. C. HYSLOP.

DECIDEDLY not. The first B.P. was published in 1864. The Sale of Food and Drugs Act was passed in 1875—eleven years afterwards—and the Act to amend it in 1879. Yet not a word is found as to the Pharmacopœia in either of the two Acts. Can it then be possible that the framers of those statutes had the least idea of making the Pharmacopœia a standard in their administration?

True, the question is by no means a simple one, nor uninteresting, for the term "drug" occurs in the Act as often as the term "food," and one would naturally expect that where so much is said of "drugs" the Pharmacopœia would to some extent be recognised. Hence the omission becomes the more significant. But is there any standard mentioned for "food"? No. Why, then, should we expect to find one for "drugs"? The idea has arisen purely from the indolence and incapacity of those whose office it is to look up the sinners and mete out the punishment. They are down upon the poor milk-sellers, because they think it is so easy to determine the amount of water that has been mixed with the milk, and they are down upon the unfortunate chemist for a similar reason; he has a book in plain English, to be his one standard of strength and composition for the substances which the physician prescribes. So they are ever meddling with this book and with him in his dispensing business. Pity the Pharmacopœia is not still in Latin, which might confine men more to their true and proper callings.

Now this omission of any reference to standards was, it would seem, recognised very early as a defect in the working of the Act, hence the Sale of Food and Drugs Amendment Act of four years later had for its main object the adoption of certain standards with respect to brandy, whisky, rum, and gin. The essential function of the Sale of Food and Drugs Act is evidently to come to the rescue of the purchaser, with reference to his lameness as to that time-honoured motto, *caveat emptor*: "Let a buyer take care of himself." It was found that the tricks of trade were so guileful and varied that a buyer could not take enough care of himself, and this Act was passed to render his self-help more possible and easy. It has thus entirely to do with trade, and nothing whatever with the dispensing counter.

If a sausage maker uses up meat that is too bad for his dainty productions, even his offence may be punished by another Act of Parliament, but it does not come within the four corners of the Sale of Food and Drugs Act. Similarly, if a dispenser of medicines commits an offence against the B.P., he may be proceeded against under the provisions of the Pharmacy Act, 1868, Sec. 15, which reads thus:—"From and after the 31st day of December, 1868, any person who shall sell..... or use the title..... or shall fail to conform..... or who shall compound any medicines of the B.P., except according to the formularies of the said Pharmacopœia, shall for every such offence be liable to pay a penalty or sum of five pounds." If, therefore, I am asked for a seidlitz powder, or for a box of seidlitz powders, my only safe and proper course is to supply without a word of remark the "pulv. sodæ tart. efferves." of the B.P., for I am told in a foot-note, where this formula occurs, enough to imply that this is what a consultant is most likely to mean by telling his patient to take a seidlitz powder. Now, if I give a larger dose, without being requested to do so, or a smaller one, I certainly disobey the clause just quoted from Section 15 of the Pharmacy Act, and I may, I suppose, be punished for so doing, but the offence surely has nothing to do with the provisions of the Food and Drugs Act, the object of which is to prevent fraudulent and deleterious admixture with articles of food or physic.

In full support of this view it will suffice to note the schedule that accompanies the Act. This gives the form for the analyst's certificate, which must be produced in court; it runs thus:—

"To Mr.....

"I, the undersigned, public analyst for..... do certify that I received, on the..... from Mr. a sample of..... for analysis, which then weighed..... and have analysed the same, and declare the result of my analysis to be as follows:—

"I am of opinion that the same is a sample of genuine..... or

I am of opinion that the said sample contained the parts as under, or the percentages of foreign ingredients as under :—

Then there comes a space for observations, with a foot-note to explain that "here the analyst may insert at his discretion (?) whether the mixture (if any) was for the purpose of rendering the article portable or palatable, or of preserving it, or of improving the appearance, or was unavoidable, and may state whether in excess of what is ordinary or otherwise, and whether the ingredients or materials mixed are, or are not, injurious to health.

"As witness my hand this.....day of.....

"A B.

"at....."

These are some of the grounds on which rests my opinion that the Food and Drugs Act has nothing whatever to do with the B.P. or with the dispensing of medicines. Otherwise note a few of the incongruous results. Poor people on a Sunday, when other shops are closed, could not get their cheap carbolic acid because the chemist may not sell any but the B.P. article, for which he has to pay more than one shilling per pound.

What would my Lords of the Privy Council think of this? Burden the taxpayer perhaps, so that an article as useful for wrapping up dirtiness as for promoting suicides might be supplied gratis and *ad lib.* Then as to wax, white wax B.P. is bleached beeswax, but there is plenty of very useful white wax which is not the produce of bees, and in certain arts it is preferred for its suitability as well as its cheapness. In the laundry business, electrical engineers, engravers, etc., white wax is used, but beeswax would not suit even if it were cheaper. We chemists know people's respective wants in these matters better than other men, yet we are to be prohibited from selling these things if the same name also happens to occur in the B.P., with tests and a standard to determine the exact variety of the article that is to be used in medical dispensing.

Then there are the essential oils quite on all fours with the wax question. The oils of juniper, lavender, peppermint and rosemary—for medical purposes we must pay from 3s. to 8s. per ounce for these, whilst the public requires an article worth from 6d. to 1s. an ounce. Are we not to supply these varieties because we happen to be chemists and although these are as good as the dearer kinds for the purposes required?

Indeed, it comes to the old, old tale, a case of trade *versus* pharmacy. Mere buying and selling is always over-shadowed by the *caveat emptor* notion, joined of late with the threatenings of the Food and Drugs Act, as against the mere trader, who by means fair or foul, will press for the uttermost farthing of profit.

The dispensing of medicines, whether by verbal or written directions, is, on the contrary, illuminated by the special light of the B.P.: that is supplemented, perfected as far as may be, by the trained skill and competent experience of the dispenser, who, mindful of his high vocation, is half insulted when he meets with the *caveat emptor* idea across his own counter; he has more than enough of this in selecting his own drugs and the preparations which he has no time or convenience to prepare for himself. The ideas that guide his life's business come from quite another quarter, have quite a different ring about them; in the forefront stand leaders such as these:—

Caveat dispensator—Let the dispenser take the care.

Noblesse oblige—One's distinguished position involves great responsibilities.

LONDON WATER ON ITS TRIAL.

It is a characteristic of trusts and monopolies that the questions of truth or of public well-being are subordinated for dividends. About three years since we published some facts about London water which directly controverted those officially published, and we are glad to find the point about London water which we have so often emphasised, dealt with last week by the *British Medical Journal*. The article is a model of convincing facts:—

"The patent fact and the standing menace to the safety of London," says *The British Medical Journal*, "is this, that the Thames and the Lea drain populous, highly cultivated, and therefore highly polluted areas. There was in 1891 a population of 1,056,415 persons living on the land which drains into the Thames above the various intakes of the water companies at or near Molesey, and this population is rapidly increasing. On the same area there were also probably about 1,600,000 animals. No doubt the art of filtering water has been, theoretically at any rate, brought to a pitch of very considerable perfection. But it certainly sometimes fails, and it is clear that so long as we drink water derived from a thickly-populated area over which the use of waterclosets is rapidly extending, so long must we remain absolutely dependent on the unintermitting efficiency of processes of sedimentation and filtration for our protection from the evils of drinking sewage. Let us compare with these tainted sources the gathering grounds offered by the County Council's Water Committee. 'The areas from which the water would be derived are composed of the impermeable beds of the primary rocks of the old red sandstone and silurian systems, which are noted for the purity of the water which flows from their slopes. Owing to the general altitude of these districts, on the steep slopes of the surrounding hills, arable cultivation is almost impossible, the lower portions being chiefly composed of mountain pastures running up into bare, unculturable wastes, with but a sparse population in any part.' As we understand the suggested plans, the land from which the water is to be derived would be purchased outright, certain villages would be abolished, drains would be dug out and cleansed, burial grounds would be cleared of their contents, and the whole area would be devoted to its one purpose of gathering water for the supply of London. We assert, then, that there is no comparison between the two alternatives, and that if London wants to have pure water its engineers should go at once to a pure source rather than adopt mechanical means, however ingenious, for clarifying water which has once been sewage.

"It seems to be maintained by some that so great is the power of filtration that it really does not much matter where water comes from, and that notwithstanding all we know as to the material which flows into the Thames and the Lea, their water has only to be filtered to be rendered wholesome. The wisdom of trusting everything to a process which is so rough and ready, and so liable to break down in its various details, must be seriously doubted.

"We have lately been told that after the filtration to which London water is subjected it is sometimes absolutely sterile; but that is not the point. The real criterion by which filtration has to be judged is not its power of occasionally producing a pure effluent, but of always keeping back such micro-organisms as may be present in the water. As a matter of fact, a certain percentage only appears to be kept back, and so long as the occurrence of floods in the river is found to influence the character of water in the pipes, so long must we be allowed to distrust filtration as a reliable means of producing a pure water from a doubtful source, although it is of course admitted that when no pure source is available it is the best that can be done.

"The assertion made lately that the bacillus of typhoid fever has never been discovered in the water supplied by the London companies has been accepted by some as showing that, at least so far as typhoid is concerned, London water is innocuous. In relation to this, it may be well to recall to mind the investigations made by Mr. Parry Laws and Dr. Andrewes in regard to the presence of this organism in sewage. The most careful search failed to show it in the sewage at the outfalls, although it was estimated that there were 200 cases of typhoid fever in London at the time. It was, however, found in the main drain leading from the fever hospital at Homerton, in which some 40 cases were being treated, but even in this case, on going about a quarter of a mile further down the drain, the bacillus could no longer be discovered. Yet no one would accept the non-discovery of the typhoid bacillus as proving, or even suggesting, the wholesomeness of London sewage, and the same may be said in regard to its non-discovery in London water."

Our contemporary concludes by saying "London river water stands absolutely and hopelessly condemned." London's water companies are on their trial, and the way to look at the question is not how the decision may affect the companies, but what is the wise and honest course to adopt with regard to our water supply. The pronouncement of the leading medical journal of the world is timely and weighty, and shows that it would be a crime against London to bind it, for generations yet to come, to Thames and Lea drainage and sewage, more or less filtered.

THE SYMPTOMS AND DIAGNOSIS OF THE INDIGESTION OF STARCHY FOODS.

BY REYNOLD W. WILCOX, M.D., LL.D. (of New York).

Professor of Clinical Medicine and Therapeutics at the New York Post-Graduate Medical School and Hospital; Visiting Physician to St. Mark's Hospital.

(Concluded from page 119.)

So far as the difference in the digestion of starches at the various points is concerned we may follow Kirke in stating that while the pancreatic and intestinal juices are able to turn the achroo-dextrin which remains into maltose, and maltose into glucose (dextrose) it is doubtful whether saliva possesses the same power.

The difficulty of reaching the diagnosis of the indigestion of starches in the intestine is already apparent, yet we believe that in a given number of instances it can be arrived at with reasonable certainty. The importance of making this investigation is great when we consider that to the assimilation of changed starch we owe much. On the other hand we have proof—if proof were lacking—that the indigestion of starches is a frequent condition—not so frequent, however, as Coutaret, in 1870, would have us believe, 60 per cent. of dyspeptics—by the prevalence and somewhat good repute of dyspepsia-cures based on raw beef and hot water. And when we consider that in France bread has a prominent post on the dietary, and in other European countries starchy foods are even more largely employed, the importance of the subject is apparent. In this country, not only does hasty eating, but bad cooking, and the imperfectly raised biscuit and cakes, and other pastry are often saturated with greasy substances, and give us reason to believe that starchy dyspepsia is even more frequent.

Taking up the symptoms of intestinal indigestion as referable to the failure of starch conversion I would place first and foremost constipation, of which the cause is quite likely that the colloid-like unconverted starch does not so readily permit of watery osmosis into the intestine as does the sugar into which it is converted, which acts as a crystalloid. The accumulation of undigested and unabsorbed material may even be considerable and give rise to marked enteroptosis (Glenard). On the other hand diarrhœa is comparatively infrequent; however, fermentation may go on briskly so that a large amount of irritating material may be formed and its expulsion take place. Should diarrhœa exist it is likely to be diarrhœa alternating with constipation and not the persistent one which may characterise other intestinal conditions.

The symptom next in importance is undoubtedly flatulence, especially that which occurs two or three hours after meals. The question here arises as to how much of this may be due to gases from the imperfect digestion of proteids in the alimentary canal. To clear up the question we must refer to the work which has been done upon various sulphur compounds. Baumann in 1880 propounded the theory that the combined or

ethereal sulphates found in the urine were an index of the amount of putrefactive products absorbed from the intestine: these are chiefly indol, phenol and skatol; the latter is practically of no importance in this study, since it is found almost exclusively in the large intestines (Filati). Indol by oxidation become potassium indoxyl-sulphate, long known as indican. Looking upon indol as the product of bacteria upon the proteids as Kuhne and Nencki would have us believe, and considering with this the view of Pisenti that the amount of indican depends largely upon the activity of the pancreatic fluid we come close to the clinical fact that clay-coloured stools, excessive preformed sulphates, and abundant indican in the urine are associated with defective secretion of pancreatic fluid. To Herter and Smith all who study this subject must acknowledge their indebtedness for their exhaustive work upon the preformed sulphates and indican and their relations with intestinal indigestion. Since then we have the proteids as the source of sulphur compounds, the causation of flatulence can be determined by the increased ratio of preformed to inorganic sulphates and by the excess of indican in the urine. Therefore, flatulence as a symptom, when the chemical evidence of proteid indigestion is absent, can with reasonable certainty be referred to amylaceous dyspepsia, with greater reason, indeed, than appears above, because the gastric hydrochloric acid retards bacterial activity, and an excess poured into the intestine markedly interferes with the digestion of starches. Confirmatory of this view is the observation of Kast, that neutralisation of the gastric juice with sodium carbonate was followed by an increase of ethereal sulphates. Biernacki practically reaches the same conclusion when he says that the excretion of putrefactive products is large, with great decrease of hydrochloric acid secreted. The further suggestion can be made that the gases due to proteid indigestion are sulphur-containing and consequently more obnoxious than those of the marsh-gas series of carbo-hydrate origin. Yet it must be borne in mind that gluten associated with the carbo-hydrates is a sulphur-containing body, so that this distinction is not so important as it would at first appear. Coincident with flatulence are the painful phenomena from heaviness, tenderness, and abdominal discomfort to colicky pains. Since flatulence is more marked with starchy than with proteid indigestion, these symptoms are more prominent. Further, because constipation is an important factor; abdominal heaviness, in addition to acute pain, is frequently found. Not only are local physical signs, as fulness, tenderness, and changes in percussion note more marked than in proteid indigestion, but the general symptoms are more numerous and persistent. The opportunity for absorption of peccant material—to use an old term—is favoured by the constipation, but as has been stated, the ptomaines of decomposed starch (amulon-ptomaine) are almost as injurious to the human body as the ptomaines of nitrogenous foods. Therefore we note the lassitude, habitual malaise, general debility (partly from insufficient nutrition), the insomnia, the various sensory symptoms, headaches, vertical, frontal, or occipital,

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and vertigo. The heart symptoms are prominent, due in part to gaseous distension, and vary in importance from palpitation, cardiac distress, cardiac pain, and tachycardia to syncope. We have also the urticarias, the muddy complexions, cold hands and feet, referable to this cause. We may even observe marked mental changes as hypochondriasis, intellectual apathy, and morbid somnolence.

The picture is a familiar one, but we all have doubtless failed many times in not differentiating this particular form of indigestion, and in attributing too much importance to the gastric, to the neglect of the intestinal digestion. After all, the diagnosis by exclusion, for such must be the method employed, and its accuracy can be readily put to the touchstone of clinical experience. Those, in whose persons starch is imperfectly digested, tolerate badly the starchy foods. The causes of the indigestion of starches are: (1) excessive ingestion of carbo-hydrates; (2) imperfect insalivation; (3) hasty mastication; (4) too diluted starch foods; (5) too great gastric acidity; (6) insufficient or perverted secretion of pancreatic fluid; (7) excess or abnormal activity of micro-organisms; (8) intestinal torpor or exaggerated peristalsis; and (9) imperfect absorption of already digested foods.

The diagnosis rests upon the positive evidence of constipation, flatulence, the sensory phenomena, the general systemic disturbances and remote painful symptoms existing in a marked degree, and upon the negative evidence as found in the ethereal sulphate-ratio and the amount of urinary indican. The picture seems clearly outlined, and at the close of our study we may say that the diagnosis of the indigestion of starchy food should be reached with reasonable certainty.

CHESHIRE DAIRY FARMERS DEMAND THE MARKING OF FOREIGN PRODUCE.

THE annual meeting of the Cheshire Dairy Farmers' Association was held at Chester on Saturday.—Mr. Joseph Beecroft (Duckington) moved:—"That it is the opinion of this association that the British dairy farmer suffers severely through the sale of foreign dairy produce as English, and that the Minister for Agriculture be requested to bring in some legislative measure to compel all foreign dairy produce imported to this country to be branded with its proper name, and also compel the seller of such produce to have affixed a label bearing the full name of the article offered for sale." A member urged the meeting not to tamper with the principles of Free-trade, but Mr. Harry Barnston, a large landowner, said the motion had nothing at all to do with Protection. The object was simply that when a customer went into a shop he might know what he was paying for.—The motion was carried by a large majority.

SOME HOME TRUTHS FOR NORFOLK.

THE *Eastern Daily News* in its issue of March 7, says:—

I should like to ask why the Sale of Food and Drugs Act is thought of so little in Norfolk. I have before me the report of the Local Government Board for 1894-5, and it does not appear that this Act has been put into operation to any useful extent in the Eastern Counties. In fact, so far as this city (Norwich) is concerned, during the whole of the year there were no more than fifteen samples examined. These samples had relation to milk, and milk only. Is everything else used in Norwich perfectly pure? Are the bread, flour, and butter, especially the latter, wholly above suspicion? Is it not marvellous that out of fifteen specified articles, the authorities in Norwich have taken the trouble to examine only one? At Yarmouth it is even worse. Not

one single effort has been made during the year at this seaside resort to learn whether the articles supplied to the residents and the visitors are what they ought to be. Surely it is not to our credit to ignore this Act, which was formed by the Legislature to protect the public against imposition. The county authorities have been a little more active, especially in relation to butter and spirits, but even they have fallen lamentably below what might have been anticipated. There is a strong feeling in many quarters in Norwich that the public are not well served in relation to many articles of food. Something should be done in the way of protection. If, as is believed, adulteration in various ways is going on, steps should be taken to check it.

We cordially support our contemporary's plain statement of the case. Norfolk's Duke is the premier in ducal rank in England. Norfolk itself has long been a candidate for premier place in encouraging roguery and plunder of the consumers by burking Acts designed for the public protection.

COFFEE UP TO DATE.

WE have before us a beautiful example of the ingenuity of our American cousins. It is cleverer than the wooden nutmeg famed the world over. It is concocted, like the Heathen Chinese's card playing, "with intent to deceive," and it would no doubt deceive 999 persons out of every 1,000. It is an imitation coffee bean, and its uses are obvious.

It was accompanied by the following thoroughly business-like letter:—

[COPY.]

"The Dowling Manufacturing Company, sole manufacturers of Compressed Coffee Compound, No. 104, North 15th-street, Philadelphia.

"To the Wholesale Trade.

"Dear Sir,—Herewith we present for your inspection a sample of our coffee compound. It contains nothing but the best of pure and healthful ingredients, and is made only in the bean shape.

"By blending with the natural coffee bean you can improve it and bring it within the reach of those unable to purchase at the present high price of coffee.

"We sell only to the trade at 8 cents. per pound, in barrels of about 185 pounds, F.O.B.

"Our process is patented.

"In ordering send sample of roast, so we can match your goods.

"Terms: 30 days, 2 off 10 days.—Yours, etc., The Dowling Manufacturing Co., 104, North 15th-street, Philadelphia, Pa."

It is a pity that so touching an object-lesson in American honesty should have come our way, for we feel it our duty to bring this latest fake in coffee, as we brought that of re-firing exhausted tea-leaves, before the Customs House authorities and the Board of Trade. They may curse us for disturbing their peaceful slumbers for any purpose other than that of drawing their salaries, but as we like coffee pure, we hope these authorities, in grateful memory of our many previous tips to them, will squelch this latest move in Yankee smartness.

THE "LANCET" COMMISSION AND MINERAL OILS.

WERE the issue involved not so terribly grave, we would be disposed to pity the poor *Lancet* and its wretched commission. Here is the Society of Chemical Industry (Scottish Section) now exposing its rubbish:—

A meeting of this Section was held in Glasgow, on Tuesday, the 3rd inst., in the rooms of the Society, 207, Bath-street. Dr. John Clark presided. The announced subject for the evening was "The Standard of Flash Point for Mineral Oil" by Mr. D. R. Stuart, of the Broxburn Oil Company. The lecturer referred at some length to the exhaustive series of experiments made by him, upon the Abel test, a matter formerly dealt with in papers of his which are already in the records of the Society. The points which he now emphasised were, that even when not over Abel standard of 73 degrees there was danger (with some sorts of oil) of severe lamp explosion, and that at a very few degrees above that the explosion had been found to be very severe; with oil of 73 degrees serious danger begins at 78 degrees in the case of oil spilled by lamps upsetting, while with oil of 100 degrees danger in like case

does not begin till there is a temperature of from 110 to 115 degrees; before the introduction of American petroleum into this country, when only the native paraffin oil was burned, there was little heard of lamp accidents, whereas reports of these have since become numerous; cheap lamps of glass and of random construction were to be avoided certainly, but the essential was the change of the flash point standard for which they were contending, since oils of 73 to 83 degrees flash point gave off explosive vapours at summer temperatures, and in winter also at ordinary lamp temperature. If a lamp consuming oil of 100 degrees flash were upset, it was a thousand to one that the light would become extinguished without doing harm. He would have the flash point fixed so high that practically it would never be touched in the case of lamps kept in passable order, but there was a powerful conspiracy in London to keep things as they now stand at every cost, and it was that influential conspiracy that they had to break down. The flash of oil for popular use should be so high that filling the lamp when burning, carrying about, or extinguishing by blowing or turning down the wick, could be done with perfect safety. If vapours were not evolved there could be no explosion, and vapours could not be evolved at all unless the oil became heated above the flash point. Therefore, the standard should be so high that under ordinary circumstances it would never be reached in the lamp of the people. Subject to this paramount condition the standard should be as low as possible. A discussion followed, and was adjourned to next meeting in April.

IMPORTANT MARGARINE PROSECUTION.

A WARRANT ISSUED.

A CASE of great importance under the Margarine Act was heard before Mr. Headlam, at Manchester, on March 6th. Daniel J. Ryan, of Oakehampton, Newport, Limerick, was charged on a summons with three offences under that section of the Act which requires all consignments of margarine to have conspicuous labels indicating the nature of the article. The defendant did not appear. The facts of the case as stated by Mr. Rhodes (who prosecuted) were as follows:—On the 16th January Messrs. Lovell and Christmas, wholesale butter merchants, Fennel-street, received a letter from the defendant Ryan, in which he said that he was desirous of shipping "choice creamery butter" to the Manchester market. The only favour the writer sought was a cheque on account on the arrival of the goods. He offered to send the butter in "pyramids" of either 28lb. or 56lb., and guaranteed large consignments afterwards. The firm entered into a correspondence with the defendant, though they were rather astonished at the offer of "creamery butter" in January. Notice of consignment was given by the defendant shortly afterwards, and on the 27th January, Messrs. Lovell and Christmas received from him sixteen 56lb. "pyramids" of what purported to be "creamery butter." Mr. Lovell, on examining the consignment, was struck by its appearance. He sent a sample to the London analyst of the firm. Mr. Otto Hehner, and when he learned the result of the analysis he communicated with the sanitary department at the Manchester Town Hall. Samples of the butter were submitted to the city analyst, who reported that the article contained from 62 to 70 per cent. of foreign fats. Mr. Lovell communicated the result of the analysis to Mr. Ryan, who wrote back saying that the contents of his (Mr. Lovell's) letter was "a cause of much surprise" to him. Subsequently the defendant wrote another letter to Messrs. Lovell and Christmas. He acknowledged the receipt of the analysis of the city analyst, and pressed for a settlement of his account. He thought the butter was worth from 8s. to 9os. per cwt., as "it had turned out such a first-class mixture." Mr. Millar, assistant solicitor in the Town Clerk's department, went over to Ireland to make inquiries. He failed to find Mr. Ryan at Oakehampton, but there saw a Mr. Coffey. The latter said that he was Ryan's brother-in-law, but added that he did not know his address. Mr. Coffey, it was ascertained by Mr. Millar, kept a dairy farm of about 150 acres. No application had been made by defendant for a sample of the consignment.—Evidence in support of Mr. Rhodes's statement was given by Mr. Millar, Mr. E. J. Lovell, Dr. C. Estcourt (the city analyst), and other witnesses.—Mr. Rhodes asked that a warrant should be issued against the defendant. It was, he thought, the most glaring case of the kind that had ever come before the Court.—Mr. Headlam granted a warrant.

GERMAN BUTTER KNAVERY.

How the Germans defraud English butter-buyers came out at Wolverhampton on Feb. 21. Before the Stipendiary (Mr. Neville) Thomas Beech, grocer, Wednesfield, was summoned at the instance of Mr. Van Tromp, inspector of food and drugs for the county, with an offence under the Food and Drugs Act, and with two offences under the Margarine Act.—Mr. T. Dallow defended.—Mr. Tromp said that he believed the sample of butter bought was a sample of that which was being sent into England from foreign countries under the name of "Butter," which was adulterated with foreign fat. In consequence, those who dealt in it were able to undersell English manufacturers. The case was one of importance.—Assistant-inspector Toy stated that he asked

defendant for some shilling butter. Defendant weighed some composition in plain paper, which on being analysed was found to consist of 80 per cent. of butter and 20 per cent. of margarine.—Mr. Dallow said that his client was a small grocer, and had been in the habit of buying butter from Messrs. T. H. Goodwin and Co., of Dudley, and the butter from which the sample was taken was bought through the firm's traveller, Mr. Handy, as butter. A butter price was paid for it, and defendant sold it as butter.—Defendant stated that he bought the substance for butter, and handed to the Stipendiary an invoice. He said he sold it as butter. For six years he had not dealt in margarine.—Cross-examined: He dealt with another firm for butter.—John Handy, traveller for Messrs. Goodwin and Co., stated that he took an order for the butter mentioned in the invoices.—Frank Goodwin, manager for Messrs. Goodwin and Co., stated that the firm received the order for butter from defendant. The goods were sent to defendant, and were those mentioned in the invoices. The firm charged defendant butter price, as it was sold to the firm as butter. It was German butter. Defendant was not to blame. German butter was a second-class butter. He had never had any suspicion about the quality of the butter. The firm sold the butter in the same state as they received it, believing it to be pure.—Mr. Roberts, solicitor, Dudley, stated that he was watching the case on behalf of the firm; but—The Stipendiary said that he had no *locus standi* to ask questions.—The Stipendiary said that it appeared defendant bought certain butter from Messrs. Goodwin. Defendant had said that he had ordered it as butter, and the invoice described it as butter, and Mr. Frank Goodwin said it was butter of German manufacture. Personally, he thought defendant did *bond-fide* believe that he had got butter. It appeared perfectly true from the analysis that he had not, but he had a mixture instead. He thought defendant was entitled to be protected under the Margarine Act, as he purchased it as butter and sold it, believing it to be such. The two margarine summonses would be dismissed. The other summons [was rather different]—that under the Food and Drugs Act. On that summons he would be fined 10s. and costs.

ATTENDING TO THE PURITY OF BALSALL HEATH'S MILK.

RESIDENTS in Balsall Heath are rightly very thankful to Mr. Jones, inspector of Food and Drugs, for the earnest attention he has lately given to the quality of the milk supply. On March 6 he had the following results:—

William Haynes, 59, Norton-street, shopkeeper, was summoned for selling milk containing 7 per cent. of added water, and minus 5 per cent. of natural fat. Inspector Jones having given evidence, defendant said that he sold the milk as he purchased it, but he had no guarantee. Mr. Fisher said that small shopkeepers could protect themselves if they went to the trouble of getting guarantees. If they did not take that precaution they would have to accept the consequences. A fine of 20s. and costs was imposed.—Wm. Bampffield, 139, Sherbourne-road, was summoned for a similar offence. In this case the milk contained 6 per cent. of water, and was deficient of 7 per cent. of natural fat. Defendant's wife said that she had a guarantee with the milk, and produced the document. From this it appeared that the guarantee was given to cover the month. Mr. Carter (magistrates' clerk) said that a guarantee should be obtained with every purchase of milk. A fine of 10s. and costs was imposed.—A similar penalty was imposed on Francis Whately, 136, Sherbourne-road, for selling milk which was deficient of 20 per cent. of natural fat.—Mr. Parker stated that the whole of the cases came from Balsall Heath, and they were giving particular attention to this district. Mr. Fisher said that it was time the public paid some attention to the shopkeepers of this district, considering the number of cases that had come from them lately.

THE LINSEED MEAL TRADE.

AN important case was heard at Belfast on March 3. Thomas May, druggist and grocer, 227, York-street, and Arthur Bright assistant, were prosecuted by David M'Master, inspector under the Food and Drugs Act, for having sold adulterated linseed meal. Mr. D. F. Spiller prosecuted on behalf of the Corporation, and Mr. A. M'Erlean defended. The inspector stated that on January 28 he went into the shop of Mr. May and asked for a pound of linseed meal. The assistant went to a drawer and lifted out some crushed flaxseed. He said that was not the sort of linseed meal he wanted, and the assistant replied that was all the linseed meal he had. Witness asked him if he had not a pound of linseed cake meal. Bright said he had, and went to a drawer and got a pound package of linseed cake meal. Witness then said he was an inspector, and had got the articles for the purpose of analysis. Mr. Spiller handed in the analysis of Professor Hodges, which showed that in 100 parts there were at least 30 per cent. of farinaceous matter added as an adulterant. Mr. Hodder remarked that that was a very common adulterant. Professor Hodges once said that he knew of no place where there was so much adulteration of linseed meal as Belfast. The other prosecutions were for linseed meal, not linseed cake meal. Mr. M'Erlean said that his contention was that the linseed cake was not a drug within the meaning of the

Act. If the Court thought it was a drug they did not want to contend it. It was honestly purchased and sold for this article. His client acted honestly in the transaction, and he could give evidence that he had purchased the meal from one of the most respectable firms in the town.—Mr. Hodder—So far as my opinion goes, the trade in Belfast up to the time of these prosecutions was carried on in adulterated articles alone. There were no pure or genuine articles on the market.—After some further conversation, the Chairman announced that they would put on a penalty of £3. Druggists should be very careful in purchasing this article.—Mr. M'Erlean said that there was a belief the cake meal was not a drug within the meaning of the Act, and it was possible they might appeal.

THE WATER-AT-SPIRIT-PRICE SCANDAL.

HOW MUCH LONGER IS THE INIQUITOUS NOTICE GAME TO BE ALLOWED?

At Falmouth, on March 5, Dorothy Harman, proprietress of the Crown and Anchor Inn, was summoned for selling adulterated whisky.—Superintendent Beare said that the analyst's certificate showed the spirit to be 30·35 degrees under proof, the legal limit being 25 degrees. In defence Mr. Jenkins produced a notice that "all spirits sold here are diluted, no alcoholic strength guaranteed," which he called evidence to show was exhibited in the house. He argued that this notice was sufficient to protect defendant, and cited cases in support of the contention. The magistrates said their course was clear, and the case was one for dismissal.—Superintendent Beare said in view of this decision he should have to withdraw the other summons against defendant, in respect to brandy 36·45 degrees under proof. The Food and Drugs Act was evidently a dead letter there.

"The evil that men do in their lives lives after them," and it is a pity that Chief Justice Cockburn and Justice Mellor did not think of this.

THE AFRICAN TRADE AND ADULTERATION AT THE OIL RIVERS.

A MEETING of the Committee of the African trade section of the Liverpool Chamber of Commerce was held last week. A letter was read from the Foreign Office, advising copy of a report by Sir Claude Macdonald respecting the adulteration of produce in the Niger Coast Protectorate, and the steps taken by the administration in this matter. Sir Claude Macdonald stated that the local regulations upon which he had fallen back only affected natives, and laid down that any native offering adulterated produce (oil or kernels) was liable to fine or imprisonment, or both. Native inspectors had also been appointed at the markets. For some time this had an excellent effect. He adds—"But these were isolated instances; some of the European agents, competition being keen, preferred buying adulterated produce to buying none at all—the result being that a market for this produce exists, and therefore the adulteration continues. I have repeatedly summoned the native trading chiefs in the various districts, and pointed out to them that this adulteration of produce was doing great injury to their trade. The answer always given was to the effect that they were aware of the adulteration, and had endeavoured to put a stop to it, but that it was quite easy for any European agent to detect "dirty" oil or "shelly" kernels, and that if they purchased these they did so with their eyes open. They also hinted that European manufactured produce—gunpowder, gin, etc., was not at all times free from adulteration, and the Bonny chiefs reminded me of an ordinance which had to be passed in the West African Colonies for the proper folding of cloth, in order to prevent the European cheating the African out of his right measure of cotton folded goods. I am of opinion that if the mercantile community combined and refused to purchase adulterated produce, and reported every attempt to sell such produce to the authorities, the evil would to a very great extent be remedied. Failing this, the only alternative would be to extend the local regulations I have mentioned to the European trader, and punish anyone found purchasing adulterated produce." A discussion followed the reading of Sir Claude Macdonald's report, part of the committee being of opinion that the Government should be asked to extend the local regulations to the European traders, and to punish anyone found purchasing adulterated produce. It was, however, carried by a majority that no further alteration in the law should be advised, but that the Government should be requested to enforce the existing regulation more strictly.

A NICE POINT OF LAW IN SCOTLAND.

At Paisley, on March 5, the following important point was decided. A complaint was heard before Shetiff Cowan, at the instance of Wm. W. Kelso, sanitary inspector, Paisley, against Charles M'Dermid, registered dairyman, Paisley, and Margaret Currie or M'Dermid, his wife, for having, as alleged, upon February 14, 1896, within their shop or dairy, refused to supply John Christie, the complainant's clerk, with twopence worth of sweet milk for the purpose of analysis, contrary to section 17 of the Sale of Food and Drugs Act, 1875. It appeared from the evidence that the milk had been paid for and handed to Christie, but on his intimating the purpose for which it

was taken, Mrs. M'Dermid wrenched the can containing it from him, and an assistant emptied the milk on the floor, saying "That's it."—Mr. M'Nish, the respondent's agent, objected to the relevancy of the complaint as laid, in that the clerk, John Christie, was not a person qualified or authorised by the Act to require milk for the purpose of analysis. Complainant's agent contended there was no limitation for taking samples to the persons specified in the 13th Section. The English case of *Horder v. Scott* had settled that it was quite competent for the inspector to depute any person to take samples. No special degree of skill was required, and it was necessary, and was the practice all over the country, to send clerks and persons least likely to be known to take samples. The visits must, in their nature, be surprise visits, and the authorities must get the sample as an ordinary purchaser would get it. Otherwise they would always get an excellent quality, but one that would be no test for analysis. The Sheriff reserved the question of law, and a proof having been led, the charge was found not proven. He said though the boy was legally and competently taking the sample, his difficulty was whether the boy was competent to take a refusal of sale, the words of the Act being, "refuse to sell to such officer." Though the sample purchased was spilled on the floor, the dealers had offered to give another sample. He thought the inspectors should have taken it.

THE CRIME OF BEING AN ENGLISH MUSICIAN.

A CORRESPONDENT, signing himself "Baton," protests strongly against the action of the Prince of Wales, who, although president of the Royal College of Music, has been instrumental in getting the Monte Carlo band to come to London during the summer season, and perform at the Imperial Institute. By bringing over these foreign players many thoroughly capable English musicians have to struggle to keep up bare respectability. It is well-known that the Prince was the originator of the Hungarian bands. English musicians have now to don Hungarian uniforms and perform as foreigners. They do not dare to speak in their native tongue, in case our "patriotic" aristocracy should discover that they were employing Englishmen.—*Reynold's Newspaper*.

IMPORTANT TO RETAIL CHEMISTS.

At Clerkenwell, on March 9, Ebenezer Marshall, of 36, St Paul's-road, St. Pancras, was summoned for having, on January 1, sold an article capable of being used internally as a medicine, viz., "Marshall's Red Bottle," in the preparation of which methylated spirits had been used, contrary to the statute. Defendant pleaded guilty and ignorance of the law. A solicitor who appeared for the Excise authorities, stated that the penalty was £100. The preparation should have been made with ordinary spirits of wine, which paid duty at the rate of 16s. per gallon. As methylated spirits paid no duty the Revenue was defrauded. Persons who made the preparation in the proper way were also unfairly handicapped. The defendant sold the stuff at a private house. Mr. Horace Smith imposed a fine of £10. Defendant asked whether he could not sell the preparation for outward application only. The magistrate advised Marshall to consult a solicitor on the point.

A Conisbro' chemist, named Walter James Ward, was fined £2, including costs, by the Doncaster magistrates, on March 7, for having sold adulterated sweet spirit of nitre.—Mr. Baddilley, solicitor, defended.—Mr. Joseph Wilson, an inspector under the Food and Drugs Act, proved the case, and handed to the magistrates the statement from the analyst, which showed there was 35 per cent. of added water to 65 per cent. of sweet spirit of nitre, and it was pointed out that this was very objectionable, seeing that it caused rapid decomposition of the real nitrous ether, to which sweet spirit of nitre owed its chief medicinal value.

CORRESPONDENCE.

SEIDLITZ POWDER PROSECUTIONS.

To the Editor of FOOD AND SANITATION.

SIR,—Our attention has been called to a report of a seidlitz powder case on p. 104, February 29, in which our manager at West Bromwich was implicated. We think when you report such cases the least you can do is to do so correctly. By omitting the word *not* in the following par. you have placed a very different meaning to it, and we will thank you to give the necessary correction in your next issue.

Par. referred to, viz :—

"These powders are measured as near correct weight as possible. They are NOT guaranteed the weights stated in the British Pharmacopœia."

It should also be mentioned that the above was printed in *red ink* across the label.

THE DRUG AND DISPENSING STORES, LTD.,
Wolverhampton.

We willingly publish the correction, and assure our correspondents that we were not aware the word *not* was on the label, or that the report was incorrect. We regret the error.—[Ed.]

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THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—
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M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—
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Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

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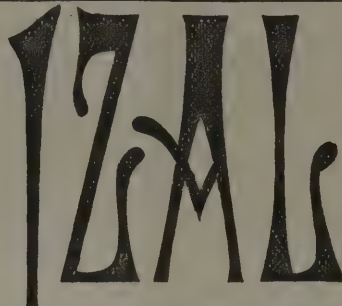
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Food and Sanitation.

SATURDAY, MARCH 21ST, 1896.

THE PATENT NOSTRUM TRADE.

A correspondent says:—

"DEAR SIR,—I am rather surprised, as a reader of your excellent journal, at seeing apothecaries fined for selling Seidlitz powders containing a few grains more or less of tartaric acid, a thing of very little consequence as far as the taker is concerned; and yet see advertisements such as the enclosed scattered broadcast everywhere; and Mother Seigel's Syrup advertised in that

very pious work, the *Protestant Observer*. When you read the language of the walls, railway stations, quack advertisements, etc., you might ask with the Spanish ambassador of old, 'Is there an honest man in England?' Now that analysis is so accurate, could not the composition of the Pink Pills, and Mother Seigel's Syrup, be given to the public, and prevent firms from trading on names, and the opinions of nervous, ignorant men and women?"

Along with his communication our correspondent sends us a wretchedly-printed booklet, entitled, "A Miracle Map," issued by an American nostrum quack, and—we should judge from its get-up—made in Germany. We have on many occasions published analyses of quack nostrums, but individual exposures are powerless to open the eyes of the masses to the humbug. The truth is that practically, without exception, the daily papers of the United Kingdom gain a large portion of their living from quack nostrum advertisers. Of weekly papers the religious ones are the very worst, some of their advertisements being positively disgraceful, but all are slaves of the quack nostrum monger with the exception of this journal, the *British Medical Journal*, and some six other journals, of which we are pleased to say the *Lancet* is one. In other countries, the quack nostrum vendor is not allowed to pursue his course of deception unchecked, and it is a fair question to ask, how long will our Government degrade itself by lending its sanction to heartless swindles for the sake of the sum realised by the sale of stamps for patent medicines? The total revenue from this source only equals some £200,000, and for that comparatively paltry amount the Government sanctions the vending of swindling and worthless rubbish, the honesty of our public press is debauched, and untold injury inflicted upon thousands who are credulous enough to believe the lying advertisements with which our newspapers teem. Not only that, but poisons of the most deadly character are sold with impunity. To give one instance:—On April 6, 1891, Dr. Paul, the analyst of the Analytical Laboratory, 20, Victoria-street, London, reported on thirteen patent medicine preparations he had analysed. Nine of them contained morphine—a poison—in quantities varying from .8 to 3.11 grains per fluid ounce, and two also contained prussic acid. Two samples contained strychnine, and one contained aconitine. Only one out of the thirteen was labelled "poison," and these so-called medicines are on sale by all kinds of people—grocers, general dealers, quacks, etc.

Every year sees a fresh gang of impostors—Arab doctors, Indian medicine men, American nostrum vendors, etc., with brass bands, carriages, and gorgeous advertisements, gulling the public with impunity; and the press that should expose such frauds—because the public analysts are powerless to interfere—is, with a few exceptions, satisfied to let the swindlers flourish, on account of large advertisement orders.

In no country in the world are such facilities offered to the quack nostrum vendor as England affords. In some Continental countries the patent medicine swindlers have a rigorous supervision exercised in respect to their nostrums. At Carlsruhe, Baden, the Local Board issued placards respecting some patent medicines. Of a certain cure for rheumatism, affections of the joints, and shooting pains, they said:—"On analysis, this preparation was found to consist of simple plaster, spread out and prepared in a most unsatisfactory manner. It has no effect whatever on the complaints enumerated." A remedy for apoplexy was analysed, and proved to be arnica tincture coloured red. The ordinary retail price of it would be 8½d. The patent medicine was sold at 8s. 4d. A patent purgative remedy for hemorrhoids, liver disease, and chronic catarrh of the bowels was found to be an aqueous solution of soda and soap, oil, glycerine scented with acetic ether, and essence of camomiles, having none of the medicinal virtues claimed for it.

Analyses of English advertised remedies give results

differing but little in character from those above. Clarke's Blood Mixture on analysis by Dr. Alfred Swaine Taylor, F.R.S., was found to contain:—Iodide of potassium, 64 grains; chloric ether, 4 drachms; solution of potash, 30 minims; water coloured with burnt sugar, 7½ ounces. Of this concoction Dr. Swaine Taylor said:—"Why such a mixture as this should be designated a blood mixture and blood purifier is incomprehensible. The four doses directed to be taken daily represent 16 grains, and if the person taking it is not under medical observation, such a daily quantity as this may accumulate in the system and do mischief. In some constitutions the iodide of potassium frequently taken proves specially injurious. It produces iodism."

We have swindles like that launched by W. T. Stead, where dirty water is sold as a cure for cancer under the high-sounding title of "Count Mattei's Cancer Cures," at 3s. 9d. for a bottle of about two ounces. Even unfortunate, impoverished, and misgoverned Italy is not degraded enough to do as we do in England, and for about £200,000 per year hall-mark a host of shameless swindles.

One way to deal with the patent medicine trade would be to compel the nostrum vendors, as in Italy, to declare on their labels the composition of the so-called remedies. Who, for example, would believe the impudent assertion that Beecham's pills are "worth a guinea a box," if the proprietor were compelled to disclose the contents on the labels, which would show they were worth only a few pence for a pound? Who would pay any attention to the artfully worded "she will never tell the secret," humbug of Mother Seigel's Syrup were the proprietors of that nostrum compelled to announce on their wrappers that the stuff consisted of treacle, borax, aloes, capsicum, and liquorice, costing and worth but a few pence. In one issue of what purports to be a fearless champion of the working classes, a widely-read Radical newspaper, we counted twenty-five advertisements of patent preparations, some of them containing poison, but none of which are labelled as poisonous, and every one of them a mean swindle upon the credulous poor, who will be induced by the lying advertisements to expend their hard-earned 1s. 1½d. or 2s. 3d. on the rubbish.

"Sequah's Prairie Flower," another flaunted quack remedy, is composed of 735 grains of water, 105 grains of aloes, and 35 grains of carbonate of soda, a few drops of the tincture of capsicum and myrrh being added.

Worthless preparations costing a few pence are sold at prices of 2s. 9d. to 11s. per bottle, and aided by the public press and the supineness of the Government, the sale of the nostrums is every day increasing. It is a gross public scandal, disgraceful to the Government that allows it to flourish.

As to the harmless ones of the Holloway, Beecham, Seigel, Sequah, etc., stamp, pending legislation to prevent the sale of worthless preparations being officially recognised by the patent stamp, which stamp in the minds of the ignorant gives the patent medicines a valuable Government authorisation as being wondrous remedies, it is at least the duty of the public press to exclude the advertisements of the rubbish from its columns. Without advertisement the nostrums would cease to sell, and it is only right to ask that the journals that preach honesty and morality in their leader columns should cease to encourage imposture and worse in their advertisement columns.

The simplest way, however, to squelch the impostures would be a short Act of Parliament, compelling the nostrums to bear each a guinea stamp. Those who advertise that their quackeries are worth a guinea a box, and who boast that the public find them so, could not complain if they were taken at their own words. But what member of Parliament has enough regard for the public protection from imposture to bring in such a measure?

In the booklet our correspondent sends us, there is what purports to be a reprint from the *Bradford Daily*

Argus of a wonderful cure at Sisterhills, Bradford. There is no such place in the vicinity of Bradford or in Bradford itself.

PURE BEER AND SPIRITS.

Two years ago we wrote suggesting a Pure Beer Bill, pure and simple in place of bungling half measures, and we are glad to note that our suggestions and arguments have at last commended themselves to some of our legislators. Mr. Cuthbert Quilter, M.P., has been fortunate in the ballot, and his Bill will be introduced on March 25. It will provide that beer, ale, stout, or porter shall be made exclusively from barley malt, hops and water.

We have always contended that there is only one real remedy for the suppression of swindling in beer—viz., that only the product of malt, hops, water, and yeast should be permitted to be called *beer*, and that similarly, as has been the case with butter, imitations should be called by some other name, as margarine is. "Sugarine," "Swipesine," and "Filthine" are all names which might legitimately be applied to beer as it is now concocted.

Comparing the sugar used for twenty years, we find, on the authority of the *Mark Lane Express*, the quantity of sugar brewed in 1872 was only 260,610 cwts. In ten years (1882) this had more than quadrupled to 1,142,845 cwts., and in 1892 it again nearly doubled, being 2,096,720 cwts. This vast quantity of sugar displaces over 1,000,000 (one million) quarters of malt. In addition, an unknown, but vast and rapidly increasing, quantity of barley malt is displaced by rice, maize, and other substitutes of which at present no entry is made by brewers. These, probably, equal nearly another million quarters.

This vast displacement of barley malt decreases the demand for and price of barley; it paralyses the malting industry, and so deprives farmers of a most valuable reserve of skilled workmen, who come from the malt-house to the fields just when required; and it deprives stock-keepers of a large quantity of excellent food. Sugar produces no grains whatever; rice and other substitutes, very little or none.

In considering this very vital question and its effect upon English agriculture we must not forget that the cheapening of cost of producing beer and throwing out of work thousands of Englishmen, that niggers and the like may benefit, profits the brewer—and him only. The public pay the same price for beer as they did when it was genuine. We have lately had some hard things to say of the *Lancet*, and it gives us pleasure therefore to recognise that upon this question its attitude is in every way admirable. It says in its last issue:—

"Beer has been the subject of legislation from a very early time, and, contrary to what many believe, was adulterated in the old days as much as it is now, though in quite a different way. 'And you, maister brewer, that groweth to be worth £40,000 by selling of soden water, what subtilty have you in making your beer to spare the malt, and put in the more of the hop to make your drink, be barley ever so cheap, not a whit the stronger, and yet never sell a whit the more measure for money. You can, when you have taken all the harte of the malt away, then clap on store of water ('tis cheap enough) and mash out a turning of small beer like rennish wine; in your conscience how many barrels draw you out of a quart of malt?' So was it written in a curious tract published in 1592. According to those who are supporting by petition Mr. Cuthbert Quilter's endeavours to introduce a Pure Beer Bill on the 25th inst., the question, 'How many barrels draw you out of a quarter of malt?' would still be an awkward one for some 'maister brewers' to answer.

Not, however, because malt is used sparingly, but not at all. Sweet wort may consist of the sugars obtained from certain starches by the hydrolising action of weak boiling acid. The weak saccharine solution may then be fermented and subsequently bittered with anything but hops. The resulting product, therefore, is not a malt liquor or such a wholesome bitter as if it contained hops. In short, it is not beer; no liquor should be described as such that is not brewed exclusively from barley malt and hops. We trust that the petitioners who are now humbly praying that such a definition may shortly become law will have their petition granted."

Mr. Quilter's proposal is, however, mildness itself to what it should be, and we confess we should have liked it better had it been a Bill to secure pure beer and spirits. Why should Scotch and Irish whisky be concoctions of Indian corn, potato spirit, damaged fruit, chemicals, etc.? Experience teaches us they are not so wholesome as genuine malt whisky, and the use of the swindling substitutes is another serious blow to English, Irish, and Scotch agriculture. A pure beer Bill will arouse just as much opposition as would a pure beer and spirits Bill, and no article should be allowed to be called whisky that is distilled from other than fermented grain. At present the distiller can, if he chooses, make whisky from the contents of his insanitary dust-bin, and no law can prevent him. The brewer can use any trash and chemicals he chooses, and call the product beer. Apart from the injury these practices inflict on agriculture, the substitutes are more injurious than pure drink. Some of them almost rival the famed drink of the Babylonians, called *cuttach*. It possessed marvellous properties, for, according to the *Abodah Zarah*, "it obstructs the heart, because it contains whey of milk; it blinds the eyes, because it contains a peculiar salt which has this property; and it emaciates the body, because of the putrefied bread which is mixed with it. *If poured upon stones it breaks them*; and of it is a proverb, that 'It is better to eat a stinking fish than take *cuttach*.'" We know of one English town where a brewer drew his water from a well situate at the foot of a hill. On the top of the hill is a cemetery. His brew is spoken of by those who drink it as "having plenty of body in it." Between this choice product and *cuttach* we find it, as Dr. Wendell Holmes said:—

"Hard to tell which of the two is worse,
But any one is bad enough
To make a fellow curse."

If Mr. Quilter's Bill reaches a division the public will do well to mark the voting. For the Bill will be those who honestly wish England prosperous; against it will be the rogues who make of Parliament a cloak for their knaveries. That there may be no doubt of the character of the rascalities for which they will vote, we publish the following object lessons:—

A correspondent, writing to the *Brewers' Journal*, November 15, 1891, says:—

"Thanks for your information respecting copper. I should be glad of your advice for the treatment of acid beer for blending. I do not like liquid neutralisers. How would it do to treat impure brewing water with *carbolic*? What quantity for five barrels, and where to be used. *I find with calcium chloride the beer will not keep; it picks up the original stink!*"

Another correspondent in the same issue says:—

"We have several barrels of returns, which we think too old to mix with the fresh beer, although *none of it is very sour*. Which is the best way to get rid of it? We have been accustomed to work off about 5 per cent. in the racking square."

Now, our opinion is that the public don't want "acid beer treated for blending," neither are we of the belief that beer that "picks up the original stink," or that

"beer, none of which is very sour," should be worked off "in the racking square," and the sooner the House of Commons stops these filthy practices the better for public honesty and English industries.

SUNDERLAND AND FOOD IMPOSTURES.

WHATEVER else Sunderland has been, its rulers have been consistent in making the Adulteration Acts practically a dead letter. The last issue of the *Local Government Chronicle* contains the following disgraceful advertisement—not disgraceful to that paper, but to the authority advertising:—

"Borough of Sunderland. Port of Sunderland. Medical Officer of Health and Public Analyst. The Corporation, being the Urban and Port Sanitary Authority, are prepared to receive applications for the appointments of Medical Officer of Health for the District of the Borough and Port in the place of Dr. J. C. Wood, resigned. The salary is £500 as Medical Officer for the Borough, £20 for the like office for the Port, and £5 as *Public Analyst*, in all £525 per annum."

A little examination of the record of those responsible for Sunderland's government may be of service. Over three years ago, before the late medical officer's appointment, we said:—

"In Sunderland in 1890, for a population of 135,000 and an area of 3 306 acres, a solitary sample of butter was analysed. No samples whatever of sugar, mustard, confectionery, jam, tea, wine, beer, bread, or drugs were taken for analysis. As a natural consequence, this neglect of the Sunderland authorities for the protection of the people of that ill-managed town fostered impositions of every kind. Concoctions containing 45 per cent sugar, 30 per cent starch, and 25 per cent cocoa are sold freely as pure cocoa. Butter mixtures and margarines—many of them made from the filthiest offal and scourings of abattoirs—are sold everywhere as pure butter; the milk supply is watered with impunity; American bacon and ham is sold as English or Irish produce, and in every way fraud, assisted by the local authorities, flourishes. We do not know the composition of this scandalous local authority, but we venture to assert that it is composed mainly of shopkeepers and shipowners, for the reason that we have seen the shops crammed with adulterated articles, and these frauds have gone on for years unchecked; and that we have visited the ships and found victuals supplied for the sailors in Shields and Sunderland that it would be a shame to supply for pigs' food. Energetic inspectors under the Food and Drugs Acts would be disagreeable to the venal gang who rule Sunderland and thrive on the plunder, or worse, of their unfortunate fellow-citizens. A public analyst who would have an interest in securing a pure food supply for Sunderland might give inconvenient certificates leading to well-merited punishment of many now much respected thieves; his reports might cause more samples to be analysed than has been the case in the past, and the mean filchings of the petty swindler who defrauds the poor by selling sugar and starch at the price of cocoa, and margarine at the price of pure butter, be put an end to. The action of the Sunderland Corporation is, therefore, one that might naturally be expected from such a body. It proposes to pay £5 extra to a medical officer of health to discharge, in addition to his duties of medical officer of health, those of public analyst for a borough of 135,000 persons. Apart altogether from the mean insolence of this offer, the fact that a man may be an excellent medical officer of health, and be useless as a public analyst, for the reason that analyses of food, drinks, and drugs can only be thoroughly well done by those who make of such analyses a life study—a combined appointment of this nature has only one object, viz., to burke the Adulteration Acts. The duties of medical officer of health for a town of 135,000 inhabitants are sufficiently exacting to occupy the whole time of any conscientious official, and we approve heartily of the protest raised by the *British Medical Journal* on September 24th. Our contemporary says:—

"The system of thrusting all sorts of extraneous duties on the shoulders of a medical officer of health is injurious to the public service as well as unjust to the officer. Mean and short-sighted persons may hug themselves with the belief that by adopting such a system the duties of distinct offices will be discharged for the lowest pay which can be given for only one of them, but it may be hoped that the

time is not far distant when the fallacy of this notion will be rendered generally evident, and when local authorities will be compelled by law to separate the appointments referred to, and to attach a respectable salary to each of them."

"What time can a medical officer, with the care of the health of 135,000 persons on his shoulders, give to the important question of the town's food supply? As the *British Medical Journal* says:—

"The two offices have nothing in common. They do not require the same training; they do not demand the same personal qualities; while the proper discharge of the duties of either interferes most prejudicially with the due performance of those of the other."

"Sunderland possesses able and public-spirited newspapers. We earnestly hope they will protest against the scandal of such an appointment. Should it, however, be persisted in, the Local Government Board would deserve well of the public by refusing to sanction the appointment. Times over the Local Government Board have protested against the manner in which the Food and Drugs Acts are deliberately ignored by local authorities. In one report the Local Government Board say, 'We have in previous reports called attention to the neglect of the local authorities to carry out the provisions of the Acts, and we regret that in these and other cases the local bodies responsible are content to neglect the powers with which the Legislature has entrusted them for the protection, not only of the consumers, but of the honest tradesmen who deal only in unadulterated articles, and who are now exposed to the risk of being undersold by less scrupulous competitors, upon whom the enforcement of the Acts would operate as a useful check.' The fact that the Acts have for years past been deliberately ignored by the Sunderland Corporation ought of itself to lead the Local Government Board to refuse to sanction an appointment that would only tend to the continuance of this scandalous neglect. There also ought to be enough public spirit in Sunderland itself to emphatically condemn it."

Our words of nearly three and a-half years ago apply equally to-day. We trust the Local Government Board will sanction no more of these dual appointments.

ACETYLENE A POISONOUS ILLUMINANT.

THE recent reports regarding the ease of production and the coming cheapness of the gas acetylene, and its well known brilliancy, have caused the advocates of other illuminants to do considerable thinking. On all sides are heard expressions of incredulity regarding the promised cheapness of production of calcium carbide, by whose contact with water acetylene is generated, or regarding the practicability of lamps devised to produce and burn it, or warnings about its danger to health. The *Literary Digest* quotes *Electrical Engineer*, which publishes an account of tests made by Dr. W. H. Birchmore, from which it really seems that the new illuminant will have to be used with great caution. Says Dr. Birchmore:—

"Twice in the course of my studies the opportunity occurred to measure the amount that, diffused in the air of the room, would produce distinct headache in the course of a short time, and it was found to be unexpectedly large as compared with the product of the imperfect combustion of the ordinary illuminating gases. As stated, the air in the room wherein the experiments were conducted was known to be changed once in an hour. The cubic contents of the room was about 5,000 feet, if a proper allowance is made for the space occupied by properties. The amount of gas diffused was two and one-half cubic feet, or one in ten thousand. Within twenty minutes a decided headache was noticed, with a sense of dizziness, that was a sufficient warning to get into fresh air. The second time, the experiment was made of remaining until the sight was slightly affected; this proved very foolish, for, in the course of an hour after leaving the room, respiratory difficulty appeared, and in the course of a few hours nausea, and a prostration and sense of the impossibility of exertion that forced me to remain in bed all the next day. The effects were not those of sleep, but the

exact counterparts of the subjective effects of the ether narcosis—hallucination and all. Three days afterward the heart respiration ratio was so sensitive that an attempt to walk rapidly across the Brooklyn Bridge produced such a feeling of exhaustion as to compel rest."

It is asserted also by Dr. Birchmore that the small quantity of gas necessary to produce these effects cannot be detected by smell, although the gas when undiluted has a peculiar and easily recognisable odour. He goes on to describe experiments with a guinea-pig, which show conclusively that with these animals, and presumably with human beings also, the gas may have a fatal effect. He concluded that a man would be fatally injured by breathing air contaminated with 1 part of acetylene in 10,000 for six consecutive hours. Commenting on these experiments, the *Engineering Magazine* (January) speaks as follows:—

"It is evident from these experiments that acetylene operates as an active and insidious poison, when taken into the circulation through the lungs, and that, while intermingled with air to an extent imperceptible to the sense of smell, it may produce very injurious effects. These facts will have to be very carefully considered and dealt with before acetylene can take any important place among domestic illuminants."

Others, it should be said, however, do not agree with these conclusions. M. Grehaut, a French observer, though he finds that the gas is poisonous if inhaled in large quantities, from 40 to 79 per cent., says that it is less poisonous than coal gas.

CONCENTRATED FOODS.

A CONCENTRATED Food is now being manufactured in France, for use in the army. It is prepared as follows:—Take 750 grammes (or parts) of wheat flour, then 650 grammes of the same flour are weighed out separately and converted into dough by the addition of water, and the gluten is extracted by means of a smart jet of water, the dough first being placed in a sieve. The fatty matter remains in the gluten. The flour set aside is now added to the gluten, the mass is kneaded together, and when the two substances are thoroughly incorporated 150 grammes of butter or any other fat are added, with about 30 grammes of salt. The mass is now complete (except that yeast may be added and the dough left to ferment, which process is said to be, as a rule, recommended), and it is immediately placed in the oven. When the bread is taken out of the oven and allowed sufficient time to cool, it is already fit for consumption; but when it is to be kept for some time it is advantageous to submit it to the following operations, in whole or in part:—Let it dry as completely as possible at the stove, pound and then pulverise it, compress it into cakes of any convenient size or weight, and envelope each cake separately in a leaf of tin paper, and then put them, say, by fives in air-tight tin boxes. This bread, or these cakes, contains all the nutrients necessary to nourish the body, and these, too, in the proper proportions, and reduced to the smallest possible bulk.

The *Caterer* gives publicity to this, and it is of interest to note what is now being done in the direction of concentrated food. Some time ago the American War Department conducted experiments with a view to reducing the weight and bulk of the soldiers' rations without impairing their nutritive value. The report is in part as follows:—"A company of the Seventh Infantry was detailed and furnished with condensed rations, consisting of coffee, soup, bread, and bacon. The coffee and soup were in small tablets, which when placed in boiling water, were ready for consumption in two minutes. The bread was in small flat cakes, the weight and hardness of a brick, but when moistened

swelled out like a sponge. The bacon was compressed and needed only to be warmed in a frying-pan. The soldiers started out with ten days' rations, but the campaign was brought to an abrupt end after four days of 15-mile marches. The food not only did not satisfy the hunger or give strength, but seemed to irritate the stomach." The *Medical Record* remarks:—"Thus far the human laboratory, with its multiple, interdependent, and complementary methods, has a monopoly of its own in fixing the proper standards for digestion, assimilation, and subsequent growth. Each of the varied and subtle processes of digestion must necessarily adapt themselves to the construction and functions of an organ that has a purely vital as well as a merely chemical duty to perform."

THE COMPARATIVE NUTRIENT VALUE OF MEAT PREPARATIONS.

A CURIOUS CONCLUSION.

UNLESS Dr. Hill Shaw be a humourist of the first water, and his letter is "poking fun" at the *Lancet*, it is about as extraordinary an instance of the *reductio ad absurdum* as we have ever seen. He writes in the *Lancet* of March 14th:—

SIRS,—I regret that when writing the letter which, under the above heading, you kindly inserted for me in the *Lancet* of last week, my memory did not serve me rightly in the reference I made to an account which FOOD AND SANITATION published several months past on this subject, and which error I wish, with your kind indulgence, to correct. In the absence of the article referred to, to ensure my recollection, I said that in that paper Bovril was stated to be one hundred and fifty-two (152) times superior as a nutrient to Valentine's Meat Juice, whereas I find on looking over and working out "Professor Chittenden's Percentage Composition of Beef Products, analysed 1891" tables, which you print on page 649 of your journal (March 7th, 1896), and from which presumably FOOD AND SANITATION'S calculations originated, that Liebig's extract of beef is the preparation whose proportion of "total proteid matter available as nutriment," or of nutrients as I understood FOOD AND SANITATION to then imply, is so fractionable when opposed to that of Bovril. This difference was, I am inclined to think, a novelty to others as well as to myself at the time, as upsetting previous ideas. With regard to Valentine's meat juice I think I need offer very little apology to FOOD AND SANITATION for the mistake I made, considering the esteem in which it is held by that publication. Its value as a nutrient under the same conditions as before, I reckon from the same tables, must have been estimated by your contemporary at sixteen and a-half (correctly 16.581) less than that of Bovril. Assuming as correct that it did, I have no doubt my mind was influenced by its declaration, since for some time past I have been under the impression that Bovril was a better food than Valentine's meat juice. Well do I recollect, and not so very long ago either, when I understood that the value of these two products as nutrients was in a somewhat inverse ratio to that which FOOD AND SANITATION makes it out to be; and now that you have pointed out that FOOD AND SANITATION, in stating that Valentine's meat juice is about equivalent to "the water in which dinner plates are washed," omitted to define the scope of Professor Chittenden's investigation as limited or as only giving "the total amount of proteid matter contained as compared with the amount in fresh lean beef," without entering into the considerations of extractives and other stimulating constituents, I will henceforward conclude that FOOD AND SANITATION, in not accepting your challenge of an independent inquiry into the matter, has failed to substantiate its assertions and has erred in its view of the subject, either through ignorance of what it is talking about or from a want of due consideration, and I will therefore revert to my old opinion—viz., that Bovril is "not comparable with Valentine's meat juice"—until it is proved to me to be wrong by an unquestionable authority. Thanking you in anticipation for your favour,

I am, Sirs, yours faithfully,

Llansilin, March 9th, 1896.

R. HILL SHAW, M.B. Dub.

This conclusion is delightful. Dr. Hill Shaw has the figures before him, showing that Professor Chittenden found Valentine's meat had only 0.55 of soluble albumen. He also had the fact that the total proteid matter available as nutriment was 0.55 as shown by Professor Chittenden, but he appears to think there is some wonderful virtue in the words "compared with the amount in fresh lean beef." He does not seem to realise that whilst compared with fresh lean beef, Valentine's has 0.55 of nutriment, Johnson's Fluid Beef, or Bovril, had 9.12, and that, compared with fresh lean beef, Bovril, according to his own calculation from Chittenden's figures, was 16.581 more valuable than Valentine's Meat Juice. But Dr. Hill Shaw was doubtless amusing himself at the *Lancet's* expense, and possibly chuckled at the *Lancet's* incapacity to see the point of his joke upon that journal. It is immaterial how the preparations are compared, as the results simply show that Valentine's Meat Juice has the nutrient value our analyses disclosed, which is practically beneath serious notice.

MINERAL WATERS.

A WARNING.

THE public should be on its guard against cheap mineral waters.

We give some details of analysis made of over fifty samples of mineral waters.

On analysis, the soda water contained no soda whatever, but was composed of other articles.

Several samples of lemonade contained lead, and eighteen of the whole were adulterated.

These analyses deal only with aerated waters manufactured in London in large establishments. At least two-thirds of the mineral water makers throughout the country use unpurified carbonic acid gas, in which there is more or less sulphuric acid. The majority do not filter the water used in the manufacture, and where filters are employed they remain in use often for years without being cleansed, and, as the *Brit. Med. Journal* showed recently, actually contaminated the water. Salicylic acid is employed in making the syrup used for sweet drinks at the rate of 1 oz. per 50 lbs. of sugar. Much of this salicylic is artificial and injurious. Frequently the manufacturer only has one room, in which the syrup is made, the gas is made, and the bottling done, and this room is often used also as a stable for the manufacturer's horse. Impurities of every kind gather and settle on the open syrups, producing drinks that are filthy and disease-producing. There is no inspection of any kind exercised over the manufacture, save in flagrant cases where the sanitary inspector feels called upon to interfere.

Bottles—particularly the stone ones used for ginger beer—are imperfectly washed, and often filled in a filthy state, cockroaches, etc., being frequently found in them when the beverages are opened.

Artificial essences of pineapple, jargonelle pear, etc., are invariably used, scarcely one manufacturer using the real essences for cider, apple wine, etc. The impurities are frequently so great that they take away the breath of the drinker, and a very small quantity of many of the drinks upsets the stomach.

The abominable character of such aerated waters is one of the greatest stumbling-blocks in the path of temperance, and is a serious injury to the business of the reputable firms who strive to produce wholesome and pure temperance beverages.

In the analyses mentioned some of the impure samples were the productions of firms who practically monopolise the cheap mineral water trade of the metropolis.

THE LATEST LONDON WATER DODGE.

Does anyone know Mr. C. G. Frohlich? We do not, and we don't know anyone who does. We ask the question because he has contrived to get the following paragraph into the *Daily Chronicle* :—

"LONDON'S FUTURE WATER SUPPLY.—Calling attention to the proposed supply of water from Wales, Mr. C. G. Frohlich points out that it is nearly all soft water, and the effect of such on our leaden supply pipes would be most dangerous to health, and London would be subject to wholesale poisoning."

This is an ingenious device, intended, no doubt, to entrap Londoners into acquiescing in the continuance of the London Water Company's monopoly of partly-filtered sewage and drainage.

Now, it may be unkind to "drop on" this scheme, but the occasion demands a little common-sense, and the truth of the matter is that London's water supply ought not to be considered at all from the point of view of existing houses and their unsanitary fittings. Most people know that London houses are, in a great degree, jerry-built, and that the number capable of lasting one hundred years is comparatively small; and everyone knowing anything of water supplies condemns lead pipes for water carriage. Pipes should be tinned. But to suggest that because lead pipes are used throughout London we should deprive ourselves of pure water is preposterous. It would cost less to put tinned pipes into London houses than London lost last year through burst pipes and damaged dwellings—all owing to the fact that the mains were not laid sufficiently deep. We should suspect Mr. Frohlich's letter to be a *balloon d'essai* on the part of the water companies. London's water supply, however, must be looked upon with an eye to the future, to the period when Jerry's structures will no longer shame the earth by their presence, when lead pipes for water carriage, filthy two-gallon flushes, mains laid insufficiently deep, and burst pipes will not find their defenders in Government, and when filtered sewage and drainage will cease to masquerade as *aqua pura*. We have no right to deliver our descendants bound hand and foot into the hands of the gang for whom Lord James is advocate.

THE DANISH BUTTER HUMBUG.

MR. R. GIBSON, Limerick, rubs it into Mr. Harold Faber very severely in the following letter :—

"SIR,—It matters not where Mr. Faber got his Irish returns; he is absolutely incorrect. In 1893 Ireland had 956,008 cattle under one year, 969,302 cattle under two years, 1,097,418 cattle two years old and upwards, and 1,441,329 milch cows. In Scandinavia large numbers of heifers are served to calve when two years old (which is very right and wise, in my opinion, although most Irishmen don't think so), but it is palpably unfair to strike an average without taking into account this fact. A yearling that is served is a heifer in calf. A two-year-old that has calved gives little or no milk beyond what rears her own calf, and so far as butter-making is concerned is not a 'milch cow'; and neither should rank as a milch cow in making a calculation, if it is to be an honest one.

"If, as Mr. Faber admits, it is 'quite common' to find fourteen-year-old milch cows in Denmark, a further allowance should be made for the failing powers of poor old ladies of that mature age.

"Your readers will see that I am correct in saying 700,000 milch cows would be the extreme outside number on which it would be fair to base a calculation where there is only a total of 1,696,190 horned cattle. About the fair proportions for such a total would be, in round numbers, say: 385,000 under one year, 312,000 under two years, 300,000 over two years, but not in milk, 700,000 milch cattle—total 1,697,000.

"I can quite understand Mr. Faber wanting to drop the subject, and he is quite right in not wishing to discuss the matter in public with anyone who understands both cattle-breeding and butter-making. It is patent to anyone who

knows anything about cattle that Mr. Samuel Lowe is quite right. The figures quoted by Mr. Faber will only convince many that it is physically impossible for Denmark to produce anything like the quantity of butter she exports from her present number of milch cattle, even if all her people were content never to use a drop of new milk or eat an ounce of their own butter."

We take credit to ourselves for the fact that we were the first to expose the humbug about greater purity, etc., of Danish butter compared with native produce.

ESSENCE OF LEMON.

SOME few notes on the manufacture of essence of lemon will, I hope, be acceptable. In the first place, we all learn in England that essence of lemon is made with an *ecuelle*. Every book I can find says so, and on coming out here I was not a little surprised when I could not find a single one. The principle on which the extraction of the essence is carried on may be illustrated in this way. If you hold a piece of lemon-peel up to the light and turn it inside out, a fine shower of mist will be seen to be forcibly ejected. This is not all oil, but a mixture of oil and water. Most people are unpleasantly acquainted with this phenomenon, though many have not actually seen it, for in peeling a lemon or orange with the fingers a little of the oil is often ejected into the eye, causing a considerable amount of pain. By turning the lemon-peel inside out almost the whole of the essence is removed from the peel, for each little globule of oil appears to be surrounded by water, and the liquid which remains adherent to the peel consists principally of water. As it is impossible to turn every piece of peel actually inside out, the following method is adopted: One man takes a lemon in his hand, and with three rapid strokes with a large knife cuts off nearly all the peel in three slices. The central portion, which is left, consists of most of the pulp with a little of the peel—top and bottom. This is simply pressed for making lemon juice. The slices pass to a second workman, who sits on a low chair, with an ordinary common quality bath sponge, worth sixpence, in one hand. With the other he presses the slice of peel against the sponge, pressing the edges of the peel only with his fingers, the object being to press the convex piece of lemon peel as nearly flat as possible. The amount of pressure used is slight, and, at first sight, it seems incredible that the oil globules can have been broken, but if you try the experiment of this exhausted peel inside out nothing more can be extracted. The sponge is periodically squeezed. One man working in this way can extract about 1½ lbs. (English) essence of lemon per day. To ensure the cells being fully charged with moisture, it is usual to allow the lemons to stand in water for a short time.—*The Hotel*.

A FAT APPOINTMENT.

ABERDEEN should pause, or reckless and lavish expenditure will be its ruin. Its public health committee have just recommended that Alexander Low, sanitary inspector, be appointed in the room of John M. Carnie, inspector, resigned, at a wage of 33s. per week. Mr. Low is to be inspector of unwholesome food under the Aberdeen Police and Waterworks (Amendment) Act, 1867, and to be a sanitary inspector under the Public Health (Scotland) Act, 1867, and Acts amending the same.

Thirty-three shillings per week is a ridiculously inadequate salary for a man capable of meat inspection and who understands the working of the Public Health Acts. Aberdeen is an important place, and it could surely afford to pay whoever is responsible for safeguarding the health of its citizens a wage more in accordance with the serious responsibility of the office.

Clapham does not pay the highest of salaries, but the pay runs from 40s. to 63s. weekly, and considering the dangers of a sanitary inspector's calling this rate is little enough. Inadequate salaries are a mistake in the long run as they cause the best men and the most useful in the public service to be always on the look out for better appointments, and their skill and experience is lost to their original employers. Towns and cities paying small wages really constitute themselves nursery grounds for sanitary inspectors from which more enlightened and far-seeing authorities regularly draw the best stock.

BOGUS QUININE.

A WELL-DRESSED man, who registered as J. O. Borst, Chicago, has been calling on the drug trade at Beatrice, Neb., representing himself as a quinine salesman, and offering to deliver the article at 18 cents. per ounce.

The extreme low price interested several dealers, but they had some doubts about the article being genuine. Their doubts were dispelled, however, by the man subjecting the article to analysis. He had with him a quantity of chlorine water, for the colour reaction, and as it necessitates some trouble to prepare, and is not usually kept in stock, his chlorine was used to make the test, which proved entirely satisfactory, and sales of 300 ounces were closed and the goods delivered. Suspicion was aroused later, and resulted in the determination to make a test with freshly prepared chemicals, and a local expert made the analysis and reported the article as cinchonidine, with only a trace of quinine. The patrons of Mr. Borst are mourning the loss of about \$42, as the article purchased is quoted on the market at less than 4 cents. per ounce, against 18 cents. which they paid.

The packages delivered were marked "Sulphate of Quinine, Lion brand die Deutsche Alkaloid und Chemische Fabrik Dépôt, U.S., America, 132 and 134, Front-street, New York."

ANOTHER FACT FOR THE COMMITTEE ON MINERAL OILS.

THE War Department is soliciting bids, until March 25, for furnishing the quartermaster's dépôt, at Jeffersonville, Ind., with 100,000 gallons mineral oil, 135 degs. flash test, in cases of two 5-gallon cans each. Prospective bidders can obtain specifications and blank forms by addressing A. G. Robinson, deputy quartermaster general, Jeffersonville, Ind. This in America, but we allow their refuse oils that flash at 73 degs. to be used in the United Kingdom. If 73 degs. be safe, as Professor Abel and some others swear, why should the United States army require oil having nearly twice as high a flash point?

ANALYSTS DIFFER.

THE Bathford Parish Sanitary Committee reported as the result of their investigations, that they believed that there was plenty of good drinking water to be obtained for the needs of the parish from the wells, and they proposed to bring up an early report. This sounded very satisfactory, but it transpired that in one case where half a sample had been handed over for analysis to Dr. Alford and the other to Mr. Gatehouse, there was a wide difference in the results. The former,

said the Chairman, reported that it was very good water, while Mr. Gatehouse found that the water was highly contaminated and unfit for drinking. Under these circumstances the chairman failed to see where the satisfaction came in. It was agreed to await the report, Mr. Shoobridge being asked to "push on" the deliberations of the committee.

FOR THE BETTER INSPECTION OF DAIRIES.

THE lesson taught by the many grave outbreaks of disease through infected milk is, we are glad to find, leading some local authorities to adopt measures to prevent such infection. The Malvern Link Urban Council have appointed an inspector to superintend the dairies, cowsheds, and milk shops in their district, and the Upton-on-Severn Rural District Council, some time ago, gave instructions to their inspector to compile a complete register of dairies in their district. This is an admirable example which we trust will not be lost on other district councils.

TIPS IN TURPITUDE—ARTIFICIAL RYE WHISKY.

THE following is a typical formula for this kind of stuff:—Neutral spirits, 4 gallons; refined (?) sugar, 3½ pounds, dissolved in water, 3 pints; decoction of tea, 1 pint; oil of pear, ½ ounce, dissolved in alcohol, 1 ounce. The druggist who will sell an article of this character for genuine whisky ought to be lynched.—*Pharmaceutical Era.*

PLUMBERS' REGISTRATION BILL.

THE second reading of the much-needed Plumbers' Registration Bill has again been shelved. This is a pity, for the Bill is important. By its means the public would be protected against unqualified persons fraudulently calling themselves registered plumbers. The registered plumber is the missing link in our chain of sanitary legislation. We have the medical officer of health, and we have the sanitary inspector, yet anybody is allowed to carry out the work upon the efficiency of which the health of the nation depends. Our sanitary system will continue to be a farce until we adopt some method of making the plumber responsible for his work, which cannot be controlled satisfactorily by inspection.

FOOD ADULTERATION IN BELFAST.

A VERY undeserved attack appeared recently in the *Belfast News-Letter*, charging the Belfast sanitary staff with a want of zeal in suppressing adulteration. It received the following rejoinder on March 14:—

"FOOD ADULTERATION.

"TO THE EDITOR OF THE *Belfast News-Letter.*

"SIR,—Some days ago a letter appeared in your paper signed 'Anti-adulteration,' complaining generally of the administration of the Adulteration of Food and Drugs Act, and suggesting that Belfast should be divided into eight districts, and members of the Royal Irish Constabulary appointed to each of these districts, so that more samples might be taken, and forwarded to the public analyst for the city.

"I have a very high opinion of both officers and men of the Royal Irish Constabulary, but I have an equally high opinion of the intelligence, ability, and energy of Mr. David M'Master, the officer appointed by the health committee for the purpose of taking samples. If few convictions are obtained it is not the fault of the officer. I have before me a return of all the samples taken during

the past two years, and the results. I give you a summary for the information of your readers.

"Number of samples of food or drugs taken for the years 1894 and 1895, and the results—

Quarter ending	No. of samples taken.	No. adulterated.	Amount of fines. £ s. d.
23rd April, 1894	116	6	15 0 0
23rd July, 1894	136	5	11 6 6
27th Oct., 1894	82	10	2 10 0
16th Jan., 1895	106	4	4 0 0
24th April, 1895	109	10	31 15 0
23rd July, 1895	133	6	18 0 0
26th Oct., 1895	92	11	15 0 0
20th Jan., 1896	116	15	17 14 6
Total..	890	67	£115 6 0

"A careful examination of these figures will prove interesting, and show that there is no neglect of duty on the part of the officer. I am not sure that the figures given prove that the appointment of additional officers for the purpose of inspection would prove more effective.

"The public will feel pleased with most of the remarks made by Mr. Nagle, R.M., on Tuesday last, when he inflicted a penalty of £10 for selling margarine as butter. There is only one point which I cannot cordially agree with. I think the poorness of the district should not weigh so much with the Bench. The protection of the poor should be the first consideration. The rich can, to a large extent, protect themselves. I do not wish it to be inferred that a poor seller should be fined as heavily as the rich seller, but I do think that the poverty of the purchasers should influence the Bench.

"I do hope that the time for trifling with the proved adulteration of articles of food is past.—Yours,

"Belfast, 13th March."

"ROBERT BARKLIE.

A BAD CASE AT BRADFORD.

MRS. ELIZABETH PICK may consider herself fortunate in being tried by a lenient stipendiary. Her case was a serious one, and had the Court chosen to take a grave view of it, they were empowered to inflict penalties amounting, without costs, to £80. As it was, she was only fined £14 6s. Her case was heard at the Bradford Borough Court, on March 9, before Mr. Skidmore, stipendiary magistrate, and some magistrates.—Elizabeth Pick, of Harby, near Melton Mowbray, Leicestershire, was summoned for selling milk to the prejudice of the purchaser under Section 6 of the Sale of Food and Drugs Act of 1875. Mr. F. Stevens, of the Town Clerk's department, appeared to prosecute on behalf of the Bradford Corporation; Mr. E. Williams, of Nottingham, defended; and Mr. James Freeman watched the case in the interests of the Callow Park Milk Company, Bradford.—Mr. Stevens said that the defendant had to answer to four summonses. She was a farmer, and had a contract to deliver to the Callow Park Milk Company, in Bradford, new milk with all its cream on. The proprietor of the company found that the milk sent in from time to time appeared to be adulterated. The inspector had taken seven or eight samples at the Great Northern Station, Bradford. Some were found to be all right, but in most cases there was found to be adulteration. Proceedings had been taken with regard to four samples only. The milk came from the same district as the milk in respect to which cases were brought before the Court a short time ago. The results of the analyses were as follows:—February 17th, 6 per cent. of water added, 33 per cent. of cream abstracted; February 18th, 8 per cent. of water added, 18 per cent. of cream abstracted; February 19th, 10½ per cent. of water added, 12½ per cent. of cream abstracted; February 20th, 11½ per cent. of water added and 15 per cent. of cream abstracted.—Evidence was given in support of the case by the manager of the Callow Park Milk Company, Bradford, and Food Inspector Rhodes. The former stated that there was no written contract, but the milk was accompanied by labels. One of these labels being produced and admitted, the Stipendiary Magistrate read the words upon it, which were, "Warranted pure new milk, with all its cream."—Inspector Rhodes, during the course of his evidence, said that on the 19th he kept a watch on the milk from Harby to Bradford, and it was not interfered with during the journey.—As an initial answer to the charge, Mr. Williams urged that the samples had not been divided, so as to give the defendant an opportunity of having the milk analysed, and a long discussion followed as to whether this was legally necessary in connection with the charge brought against the defendant.—The point being waived for the moment, Mr. Williams opened the defence upon the facts, and urged that if the Bench were against him on the law the circumstances were such as to call for lenient treatment of the defendant. She was a widow, and had only three milch cows, which were not sufficient to supply the milk which she had undertaken to supply. The deficiency was made up by a neighbour, and the defendant's milk was sent direct to that neighbour's premises without being tampered with or even seen by the defendant.—Evidence was given in support of Mr. Williams' statement by the defendant and her son.—The Stipendiary Magistrate expressed his opinion that on the facts the case was a

grave one, but reserved his decision, in order that the point of law which had been raised might be thoroughly cleared up, until next Monday. Unless he found some case over-riding the authorities already cited the law appeared to him to be against the defendant.

Mr. Skidmore gave his decision on March 16. He said he was satisfied that the case came within the provisions of the law, and that it was of a bad character. It had been shown that on four separate occasions milk was sent to Bradford which was greatly deficient in cream, and contained a great deal of added water. It was a bad case, and had been cleverly detected by the officers of the Corporation. For the first offence the defendant would be fined £3 and 13s. costs, and for each of the three other offences £3 11s., making a total of £14 6s. The alternative to the payment of the fine was seven days' imprisonment in each case, the terms to be consecutive. Mr. Skidmore said that considering the gravity of the evidence the penalties were light.

MORE LIGHT ON THE BERMONDSEY SANITARY INSPECTORSHIP.

IN our last issue we uttered some plain truths about Bermondsey and its Vestry of adulteration protectors. The *Bermondsey Gazette*, March 7, says:—

"BERMONDSEY VESTRY.

"On Monday evening last this vestry met for business in the board room of the Town Hall, Spa-road. Mr. A. Pomeroy, J.P., presided. Sanitary Inspector.—Six candidates had been selected by the Sanitary Committee for presentation to the vestry for the election of an assistant sanitary inspector. The candidates having interviewed the vestry, there voted for Mr. Sexton 4, Mr. Jordan 35, Mr. Bryan 22, Mr. Nesfield 30, Mr. Cherry 3, and Mr. Owner 11. The final voting was—Jordan 42, Nesfield 33. Mr. Jordan was therefore appointed. He had been assistant sanitary inspector under the Walthamstow Urban District Council for two years. Upon Mr. Jordan being called in he said that the advertisement stated that a sanitary inspector was required, but he was just informed the office was an assistant sanitary inspector. (Laughter.) Mr. Jordan was asked to retire awhile.—Mr. Pridmore said the advertisement was drafted by the staff, submitted to the Sanitary Committee, and endorsed by the vestry. If a mistake had been made he apologised for it.—Some discussion ensued upon the position which the elected candidate would occupy, and it was decided to inform Mr. Jordan that the office was that of assistant inspector.—Mr. Jordan said he had been misled. He should not have sought the appointment had he not thought that it was an inspectorship. (Loud cheers.)—Mr. Tyler: I admire a man like that. I believe he must be a Tory. (Laughter.)—Mr. Pridmore: Now I move that Mr. Nesfield be appointed. (Hear, hear.)—Mr. FitzGerald: I object to that. Let them all be put up again. (No, no.) Well, that to my mind is the best course to adopt, and I shall move that be done.—The Chairman: Shall I ask all the candidates whether they are willing to accept the assistant inspectorship? (Hear, hear.)—Mr. Humphreys said he would prefer that the chairman should state what was his opinion as to the vestry's position. In many cases fresh advertisements would be issued.—The Chairman said he was of opinion that it would be well to re-advertise, but the vestry might vote for the remaining candidates *de novo*. But he could save time by stating that the candidates within the building declined to accept the office unless it was placed under the Local Government Board.—Mr. Ecroyd said he had already called attention to this point, and he felt they should engage these officers in the manner indicated.—Mr. Glanville said he would give notice of motion that the office be placed under the Local Government Board. It would save the parish £600.—It was then resolved to re-advertise the appointment of an assistant sanitary inspector."

This needs no comment.

CORK COUNTY ANALYST'S REPORT.

MR. D. J. O'MAHONY, F.C.S., Public Analyst, County and City of Cork, in his report, says:—"During the eight months ending February 29, 1896, there were examined under 'Sale of Food and Drugs Act' 583 samples—469 milks, 76 spirits, rum, etc., 36 butters, and 2 samples of tea, neither of which latter contained exhausted or foreign leaves. Of the milks, 209 were good, ranging from 5.6 to 3.6 per cent. of fat; 148 moderate, having 3.4 to 3.2 per cent.; 76 poor, having 3.0 to 2.8 per cent., and 36 adulterated or skimmed, yielding from 2.7 to 1.8 per cent. Twenty-seven convictions followed, fines being imposed from £5 to 1s. Eight cases are pending and one case dismissed. Seven samples of milk taken at three workhouses were adulterated. Adulterating supplies to such institutions is cruel in the extreme. Life in a workhouse is hard enough, but starving there is worse, on milk which is robbed of its nutriment, those who suffer most, owing to their very helplessness, being infants and imbeciles. As direct an incentive to fraud as could well be given occurred in connection with a prosecution from one of the workhouses for milk deprived of 33 per cent. of its

fat. The magistrates were satisfied with fining the contractor 2s. 6d., and would not allow costs. Five samples of 'spirits,' out of the 76 examined, were found to have their strength reduced by admixture of water below the limit of 25 degs. under proof. The adding of a known quantity of water to a known quantity of strong spirits is one of the easiest operations under the sun, and yet to listen to evidence for the defence it appears to be fraught with difficulty and teaming with accident, the most singular part being that the accidents always tend in the direction of excess water. Four convictions were obtained, and one dismissed at Fermoy, the defendant stating that 'she had the spirits diluted for the use of her husband who was drinking at the time.' The dilution reduced the spirits to 43 degs under proof. The 71 other samples gave no evidence of the presence of deleterious ingredients foreign to spirits. Most of these were 'patent spirits,' flavoured with gin, rum, sherry, etc; 1 was 20 degs OP—a 'fair sample.' Eight ranged from 1 OP to 9 UP; 62 from 12 to 24 UP, the average spirit strength being about 15 degrees UP. Thirty-six butters were analysed; 2 contained excess water amounting to over 21 per cent.; convictions were obtained. The majority of the butters contained from 12 to 16 per cent. of water. The fat in all the samples was specially examined for margarine, with the result that there was no evidence of the presence of fat other than butter fat. A good deal has been written recently in regard to preservatives, as if the use of boracic acid and its compounds for butter was a thing of to-day or yesterday. Over two years ago I wrote the Local Government Board, Whitehall, asking if they forbade the use of preservatives in butter. In reply they sent me a printed extract from their report of 1890-91; at page 6 the following passage occurs:—"It may be noted that the use of boric and boracic acids as preservatives of butter and other substances liable to decompose speedily seems to be finding increased favour among dealers, and is at the same time creating a difficulty for analysts. There is no doubt that boric or boracic acid, if taken in large quantities, would be injurious to health, but we have no sufficient information to show whether such minute amounts as are generally added as preservatives could be regarded as having that effect, and more exact information is wanted before it can be decided whether a process which *prima facie* may be regarded as intended to prevent the loss of valuable food, must be held to be prohibited by law." The attitude of the Local Government Board, Whitehall, with respect to butter, is made perfectly plain by the above extract. Several samples of French, Dutch, Swedish and Australian butters, examined by me for merchants in Cork and Manchester, contained boracic acid—in fact, nearly all butters nowadays made for keeping contain preservatives, some as much as three per cent.; this amount is certainly more than is needed, and those who have suggested the use of preservatives, if they had erred, the error is on the right side, when they recommend that not more than $\frac{1}{16}$ lb. should be added to every 56 lb. of butter. Eight samples of drinking waters were examined; six in their then condition were suitable for drinking and domestic purposes. Two waters from shallow wells were unfit for drinking purposes, being contaminated with sewage. Four samples of fertilised and 13 of feeding stuffs were examined; all were up to their respective guarantees. Work was submitted from 32 inspectors, resulting in 43 adulterations—eight cases pending; two dismissals, and 33 convictions. Fines and costs on the same, amounting to £69, were lodged to the credit of the Grand Jury of the County of Cork.

MEAT EXTRACTS.

"In considering the question of prescribing meat preparations for their patients, medical men have two main points to recollect, namely, the price of the preparations, and their nutrient value. Both obviously call for deliberate reflection before a conclusion is arrived at. So far as the nutrient value, however, is concerned, an instructive article appears in Food AND SANITATION for Feb. 29, 1896, in which this matter is discussed in relation to two well-known extracts, Valentine's

Meat Juice, and 'Bovril.' The editor describes Valentine's as "merely an ordinary meat extract diluted with water, but as far as the nutrient value goes the water in which dinner plates are washed would be about as valuable." To prove this he publishes the report of two analysts on the preparation in question, from which we gather that the amount of albumen was only a tenth of one per cent. (0.10) in one case, and 0.55 in another. The latter result was obtained by a Professor of Physiological Chemistry in Yale University. Those practitioners therefore, whose custom has been to prescribe Valentine's Meat Juice, would do well to prove the correctness of these figures, for its high price, three shillings for about two fluid ounces, must be far in excess of its value. Meanwhile as Food AND SANITATION, in the article referred to, has disputed the *Lancet's* analysis, the latter journal has taken up the cudgels on behalf of this American preparation, and a strongly-worded paper battle is now raging."—*Medical Press*.

STOCKPORT AND AMATEUR INSPECTORS.

THE medical officer reported that on the 28th ulto. a joint agent of the Lancashire County Council and the Royal Agricultural Society entered the borough and acted in an official capacity as an inspector under the above Act, and afterwards wrote the medical officer for the name and address of the borough analyst. The medical officer stated that he declined to associate himself with the matter, being of opinion that the local sanitary authority had not been courteously dealt with. The medical officer's action was approved.

The inspector whose action was complained of acted as he did in his own private capacity as an individual. The seal that he put on the "stuff" was the seal of the Lancashire County Council. When he had found out that he had made a mistake he wrote to Dr. Porter asking if he would help him out of the dilemma. Dr. Porter declined to have anything to do with the matter, and the sanitary committee approved of this action.

On March 12, Sir John Hibbert presided at a private conference held at Preston, and attended by members of the Lancashire County Council and the Parliamentary Committee of the Royal Lancashire Agricultural Society. It was resolved that a joint deputation, strengthened by members of other county councils, wait on the Local Government Board to ask, as a palliative, for the appointment of 20 inspectors to enforce the Fertilisers and Feeding Stuffs Act, the Food and Drugs Acts, and the Margarine Act. The idea was thrown out that ten of the proposed inspectors should concentrate their attention upon Lancashire until the adulteration by which farmers are harassed was stamped out.

A BOARD OF AGRICULTURE "KILLER" AND HIS PORK.

CHARLES GODDEN, of Boxford, Colchester, was summoned at the Clerkenwell Police-court, on March 12th, by sanitary inspector Billing, of the Holborn Board of Works, for depositing for sale at 2 and 3, Cowcross-street, on the 5th February, four carcasses of pigs which were diseased and unfit for human consumption. Dr. Bond, medical officer of health, said the meat was diseased, and he formed the opinion that the animals had suffered from swine fever. The defendant said the pork was only "cramped." He had killed over 3,000 pigs for the Board of Agriculture and knew bad meat when he saw it. Mr. Bros imposed a fine of £20. Defendant said he had neither money nor goods. Mr. Bros said the alternative would be two months' imprisonment.

We could forgive this person if he had killed a few of the Board of Agriculture asses instead of confining his attention to their pigs.

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Food & Sanitation

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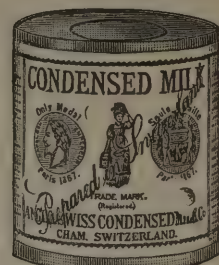
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M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

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Food and Sanitation.

SATURDAY, MARCH 28TH, 1896.

THE LONDON WATER SWINDLE.

It is really of no importance whether a man labels himself “Progressive,” “Moderate,” or “rogue”; the point is, is he honest? A long experience of Local Boards, Corporations, County Councils and Members of both Houses of Parliament leads us to think this. We don't deny that there may be a few honest men in the House of Commons, and possibly the House of Lords may not be a Sahara of “guinea-pigs” and shareholders in various swindles; but if ever representative government could be said to be on its trial,

it is so to-day. Two years ago we showed that Londoners were drinking partially filtered sewage and drainage, charged to them as pure water. In a recent issue, the *British Medical Journal* put the point admirably, saying:—

The patent fact and the standing menace to the safety of London is this, that the Thames and the Lea drain populous, highly cultivated, and therefore highly polluted areas. There was in 1891 a population of 1,056,415 persons living on the land which drains into the Thames above the various intakes of the water companies at or near Molesey, and this population is rapidly increasing. On the same area there were also probably about 1,600,000 animals. No doubt the art of filtering water has been, theoretically at any rate, brought to a pitch of very considerable perfection. But it certainly sometimes fails, and it is clear that so long as we drink water derived from a thickly-populated area over which the use of water-closets is rapidly extending, so long must we remain absolutely dependent on the unintermitting efficiency of processes of sedimentation and filtration for our protection from the evils of drinking sewage.

Last week the Kensington Special Purposes Committee discussed the replies received from the Chelsea Waterworks and West Middlesex Waterworks Companies, as regards the samples of the water taken from their mains in the parish during the past quarter, and also reports by the water companies' analysts. The communications were referred to Mr. Cassal, F.I.C., whose report with regard thereto was submitted. Mr. Cassal said he was entirely unable to agree with the assertion that the results reported by the companies' analyst were satisfactory in any respect.

Now it should be noted that the reports in favour of the purity of London's present water supply have been proved over and over again to be absolutely unworthy of serious attention. Mistakes in the taking of samples, befogging analyses, shuffles and questionable procedure have for years characterised the London Water Companies and their apologists. Londoners are deceived persistently as to the character of the water. Mr. Young, consulting chemist of the Lea Conservancy Board, recently analysed the effluent from the Hertford sewage works taken at the end of the straight cutting, and said that “it was weak sewage, partially clarified, in a putrid condition, and quite unfit to be discharged into the Lea. The sample was very turbid, had a slight brown tinge, and a faint sewage odour, and contained a small grey deposit, consisting almost entirely of sewage fungus. After keeping for two days at 60deg. to 65deg. Fah. the odour became very offensive, and a further growth of sewage fungus appeared. This sample was taken on December 16, 1895, and therefore, as it was after a heavy rainfall, was in a more diluted state than ordinary.” A sample was taken from the Manifold ditch four days later, as to which Mr. Young made an even more serious report. “I have,” he said, “no hesitation in saying the water is positively poisonous.” It is for semi-clarified sewage positively poisonous that Lord James and the Government propound a scheme by which Londoners will be liable to be plundered of twenty millions of money for the benefit of the purveyors of such semi-filtered sewage and drainage. A lesser swindle than this cost an English king his head. London must indeed be sunk in ignorance and blind to hygienic requirements if it does not raise so strong a protest against this disgraceful jobbery and robbery that the precious knavery, sponsored by Lord James and assisted by the Right Hon. Joseph Chamberlain, will never survive its baptism. It is unfortunate the swindle was not baptised with London's partially filtered sewage and drainage—miscalled water—before the Government brought it into the House of Commons, as its destination would in that event most probably have been one of the Metropolitan Asylums Board's establishments. This is not a question of politics, of “big endians” or “little endians”—it is a matter gravely affecting London's present public health and pocket, and the sanitary well-being of the millions whom this Govern-

ment propose to deliver, bound hand and foot, into the power of an organised hypocrisy. Politics is mainly the business of the rogue and the thief, and in this question, at least, London ought to look to principle and not to party or financial schemers. We do not like the party that calls itself "Progressive" in London in many things, but on this question, at least, it stands for honesty and public health, whilst the Government scheme for an insanitary swindle.

POISONOUS FOODS.

BY HENRY LEFFMANN, A.M., M.D., Ph.D.,

Professor of Chemistry in the Woman's Medical College of Pennsylvania and in the Pennsylvania College of Dental Surgery.

THE subject of poisonous food requires to be considered in rather more detail than was accorded to it in the general subject of toxicology in my last article. It is rare to see instances of food-poisoning in the colder season. In summer, however, and especially in the late summer, when the warmth and moisture make all forms of microbic life very active, albuminous substances will take on virulent activity in a few hours. These effects are most frequently noted with fancy articles and confectionery, particularly when containing milk or eggs. Cream puffs are constantly causing trouble, and the occurrence of wholesale poisoning by them and by ice cream is a regular incident of the picnic season in this country. I have already referred to the fact that the symptoms have many of the characteristics of the most active irritant poisoning. Indeed, the action is due to an irritant, though not so persistent nor so virulent as the common metallic irritants. The treatment accorded is, as a rule, not very direct. Most cases occur under circumstances preventing the early attendance of a physician, and such remedies as are used are addressed to the symptoms individually and to the tendency to prostration and not to the poison. We are not able to furnish any direct antidote.

Much mistake has been made in regard to the causation of these cases of cream puffs and ice cream poisoning, and not only have the newspapers indulged in ridiculous suggestions, but even professional men have given quite unscientific explanations. It is not unnatural that symptoms so violent should be attributed to the presence of some metallic salt, but chemical examination fails to show appreciable quantities of any of the dangerous substances of this class. It must be borne in mind that of the inorganic substances likely to cause severe irritation of the stomach, unattended by corrosive effects (for we never observe signs of corrosion in the class of cases now under consideration) many are excluded by the fact that their colour or taste would prevent their being taken unsuspectedly with ordinary food. Thus, no person could eat a cream puff or a small amount of ice cream containing sufficient copper to produce marked symptoms; the colour and taste would at once give warning. Rather large amounts of lead compounds might be taken without notice, but purging, which is usually noticed, is not a symptom of acute lead poisoning. It is, however, generally necessary to make some chemical examination of such portions of the food as may have been saved, if only to satisfy some interested parties. For such examinations, Reinsch's test, which has already been described in detail, will answer admirably. A negative result with it will exclude As, Sb, Bi and Hg, while if a deposit is obtained on the slip the nature of it can be easily verified by the method given. This test is very delicate, and, therefore, a small amount of the suspected material will suffice. It will also be necessary to test for copper and lead, by burning off the organic matter from a portion of the sample. A porcelain crucible is about the only vessel in which this can

be done with satisfaction. The destruction of the organic matter may be hastened by the cautious use of a little nitric acid. Traces of copper are not infrequently found in food, but the amount is almost always too small to give any result with the quantity of sample tested in these cases, and, besides, the finding of small amounts of copper cannot be regarded as evidence that the poisoning was due to that substance. Some articles of food are regularly coloured with copper, but not in proportion sufficient to give rise to acute effects. It will, therefore, be a mistake to ascribe the origin of an attack simulating cholera morbus, to the presence of copper in pickles or peas.

Occasionally, it is suggested that the poisonous action of food is due to artificial flavours employed. The great development of synthetic chemistry of recent years has not been an unmixed blessing. The facility and cheapness with which not only articles imitating natural flavours may be made, but by which the actual products of plant life may be artificially prepared, has led to a somewhat reckless substitution both in food and drugs. Many flavours sold for confectioners' use are merely imitations; others, though identical with the natural product, are made in the laboratory, and contain dangerous by-products. A substitute for the volatile oil of bitter almonds has long been known. It is not similar in composition or effects to the true volatile oil (benzaldehyde), but merely has about the same odour. It is nitro-benzene, and is a highly toxic substance. It has probably been at times used in cakes, but is not likely to be so used in the future, and it may be dismissed as a cause of poisoning in this respect. It is also appropriate to speak briefly of the possibility of food being rendered poisonous by the use of artificial colours. There has been as much misunderstanding and even misrepresentation on this phase of the question as upon any other. I have discussed this subject at length in a former number of the *Era*, and need here only say that all the exact information at hand is to the effect that no pronounced symptoms of poisoning can be produced by the amounts of coal tar colours ordinarily used in food and drink. What effects are produced upon the general system by the long continued use of food so coloured is not yet known, but the probability is that most of them when free from metallic substances, As, Pb or Zn, produce no serious results.

POISONOUS MEAT-FOODS.

This is a matter of considerable interest, but, unfortunately, one on which very little explanation can be given. Many instances are known in which meats, apparently in good condition, have caused serious and even fatal illness. It is also well known that mere decomposition cannot be held responsible for these actions, for certain nitrogenous foods in a state of obvious putrefaction are regularly eaten without injury. In "high" game, and in many forms of cheese, we have active microbic life present. Indeed, it often happens that the earliest stages of decay, before the odour of putrefaction appears, are more virulent than the advanced conditions.

A certain proportion of cases of poisonous action of meats may be without difficulty traced to the cause, and that is, when animal parasites are present. Practically only one form needs consideration, namely, trichinæ. These are minute worms which inhabit the muscular tissue of various animals, but especially of the hog. They become enclosed in a cyst or sack, and may lie undeveloped for a long while until the flesh is eaten and digested in the stomach of another animal, when the worm is released, matures and multiplies rapidly and abundantly. In the course of a few hours after the infected flesh is eaten the worms begin to penetrate the stomach and intestines and produce severe pains, attended by prostration. Such cases are rarely seen in this country, but have frequently occurred in Germany, where the practice of eating pork almost or quite raw is very common. Cooking easily kills the worm.

While the subject of animal parasites is but remotely connected with toxicology, yet it may not be inopportune to remark that the form of tapeworm commonly seen in this country is the beef tapeworm and not that of pork, and that the eating of raw beef must be the occasion of much trouble, of which the cause is not recognised.

Of the cases of poisoning by meats in a state of decay, all we can at the present say is, that poisonous decomposition products arise from the action of microbes. This does not explain the fact; it does little more than restate it in scientific language, but it is the best we can do. Chemical examination of supposed poisonous meats will be conducted along the lines already indicated in examinations of ice cream, etc. The results may be expected to be negative in all cases. Some day research may be expected to acquaint us with methods for detecting the specific organic poisons, which are provisionally grouped mainly under two heads, the ptomains, which are basic substances mostly crystalline, and the toxalbumins, which are analogous to the albuminoids and are not crystallizable.

It must not be overlooked that there are numerous instances of idiosyncrasy in regard to meat foods, and especially with the less common forms. Many persons cannot eat crabs, lobsters or shell fish without being made seriously ill. Such cases are not to be regarded in any way as cases of poisoning.—*Pharmaceutical Era*.

PASTEURIZED v. STERILIZED MILK.

By ALBERT R. LEEDS, Ph.D.

THE delivery and sale by the milk dealers of our larger cities, as a regular part of their daily business, of so-called Pasteurized or sterilized milk, has already grown to considerable proportions. It is therefore important to consider whether this new industry does not also necessitate new sanitary precautions.

In the first place, if the process has not been successfully carried out, the pretence of doing so involves two serious frauds: first, the purchaser pays more than is asked for common milk; and, second, he is led to misplace his confidence, and even to dispense with a precaution which he would or could exercise himself—that of sterilizing in a home apparatus.

As a matter of fact, my own experience with commercial sterilized milk is that 30 per cent. of it is not sterile.

The necessity is therefore apparent that the dairy commissioners and milk-inspectors should enlarge the sphere of their previous labours, and guard the public against these new dangers by making bacteriological as well as chemical examinations.

In this connection a curious reaction in public opinion is worthy of note. As with the cry of "Wolf! wolf!" in the ancient fable, so with the great hue and cry of Bacteria, which rose to its acutest pitch and vehemence about four years ago. To impress duly the public mind, the countless victims of bacteria should fall stricken on the public highways as if struck by thunderbolts from heaven. But when to the vulgar gaze nothing manifestly different from what they had been accustomed to happened, a reaction of incredulity set in. Some years ago it was seriously advocated in many quarters that the entire milk-supply should be sterilized, in order to escape possible infection from tuberculous cattle, contaminated water, and septic conditions in stable, dairy, and handling. At the present hour a more enlightened public opinion recognizes that both economy and hygiene demand a radically different course, which is a universal system of prevention and prophylaxis, and not primarily a system of cure. The training of dairymen in the needful hygienic requirements of their business, and a competent inspectorial supervision of cattle and milk, is now the direction in which strenuous effort is being made.

The business in sterilized milk does not grow out of

an apprehension that ordinary market milk is or may be dangerous, but from a very limited demand, usually prompted by the family physician, that the infant, invalid or sick person may have a safer and better-keeping milk. In the winter season this demand is very limited, but in the summer it grows considerably larger.

And when we come to examine more carefully the nature of this demand we find that it is not for sterilized milk rightly and properly so-called, but for Pasteurized milk. Almost all the sterilized milk supplied by milk-dealers is used within thirty-six hours, and it is rarely the case that by reason of transport by rail or ship it must be kept for an indefinite period. The consequence is that the dealers are now installing apparatus primarily designed to Pasteurize milk. Even such an apparatus involves as much outlay for plant, fuel consumption, and handling as the consumer is willing to pay for. About seventy-five minutes is requisite to raise the temperature of the flasks to 160 deg. F., at which temperature they are maintained for half an hour, and then cooled to 50 deg. as rapidly as they can be with safety. All the ordinary pathogenic bacteria are destroyed, and the others which remain do not develop at common temperatures to such an extent as to interfere with keeping for forty-eight to seventy-two hours longer than the same milk would in a non-Pasteurized condition.

Milk thus Pasteurized has very little of the taste of boiled milk or of milk which has been truly sterilized at temperatures considerably above the boiling-point. And it exhibits a peculiarity in the way in which the solids are brought together by the process of heating. In milk sterilized above 212 degrees there is a tendency of the separated fat to gather at the top in a semi-buttery, cheesy mass, and for some of the proteids to settle out as a white precipitate at the bottom. This tendency is less marked with Pasteurized milk, the separated masses of fat and proteids floating about in a diffused condition. Common sweet milk can readily be filtered through ordinary filter-paper. But in one sample of commercial sterilized milk which I have examined I found that out of a total of 13.5 per cent. of milk solids 3.79 per cent. was held behind by the filter. A similar sample of commercial Pasteurized milk, but containing 13.31 per cent. of milk solids, left in the filter 4.91 per cent.

The best flasks for the purpose are those of Schier. They are cylinders tapering into a cone, and with the rather narrow mouth closed by a flat rubber disc setting down into a conical seat. After expulsion of air and steam the atmospheric pressure forces the disc very firmly into its seat, and the simplicity of the contrivance permits every part to be thoroughly washed and sterilized. As retailed in such flasks, sterilized milk costs four cents per half-pint.

Viewed from an every-day practical standpoint, the result of a general consideration and trial on the part of the medical fraternity, and also of the general public, has been a decision in favour of Pasteurized *vs.* sterilized milk. The grounds—clinical, chemical, and gastronomic,—upon which the verdict unfavourable to sterilized milk (except where absolute sterilization is imperative) have been asked for and obtained, have already been detailed at length in other places. The use of Pasteurization for a part of the city supply, and the dozens of contrivances now in use by the dairyman for Pasteurizing milk intended for transit to the creamery and in preparing cream for butter-making, all point in the same direction.—*Dietetic and Hygienic Gazette*.

DANISH BUTTER AND BACON SOPHISTRIES.

AN Ambassador we know is a man who lies abroad for the benefit of his country. A British consul ought, by a parity of reasoning, to be able to tell the truth to those at home about the tricks of traders in the land he prances about. We have proved Danish butter a

fraud, and our Government's investigations have corroborated our proofs; but, in the face of this, Mr. Julius Clan, British vice-consul at Copenhagen, has issued a report on the agricultural exports from Denmark to Great Britain. These exports consist of pork and bacon, butter, eggs, and barley. By far the most important is butter, of which 126,270,100 lb., of the value of £5,437,011, were sent to the United Kingdom in 1894. Commenting upon this fact the vice-consul says:—"The increase in the export of butter is also very considerable, it being about 20,000,000 lb. more than last year. It thus proves that, in spite of all competition, the Danish butter has not only been able to maintain its position, but has gained a considerably larger market in England. The enormous increase in quantity is due to the cheapness of fodder. Of late years great quantities of cheap rye and barley—the latter especially from the Black Sea—have been imported into Denmark, and these cereals have mostly been used for fodder, thus very greatly increasing the produce of butter. It is also a fact that the middle classes in England seem nowadays more and more to adopt a Continental mode of living, in which butter is a most important feature, thus naturally increasing the market in England, which it is hoped may be maintained as long as all efforts are made both by way of experience and science to keep up the first-class position of the Danish butter. The only complaint is the fall in price. In the interesting Report of the Danish Chamber of Commerce for 1894, the farmers are most seriously advised to reduce the expenses connected with the manufacture of butter so as to enable them to sell cheaper, whereby, in the opinion of the Chamber, the market in England will be secured for a long time."

The increase in the quantity of pork and bacon exported to England was about 6,500,000 lbs., the total quantity reaching our shores being 99,621,500 lbs., valued at £1,911,944. About one-half of the pork and bacon sent to England is cured by the co-operative curing houses, with reference to which Mr. Clan makes the following remarks:—"Of course, the rearing of pigs has always been of great importance in so pronounced a dairy country as Denmark, as the dairies supply a great quantity of food for pigs. But the fact that enormous quantities of cheap Black Sea barley have been imported into Denmark during the last few years, which have principally been used for fodder, has caused the number of pigs reared to increase considerably. In 1890 and 1891 the number of pigs exported rose to very high figures, but in 1892, in February, the English market was closed for Danish pigs, and though a large number were exported to other countries, this was attended with great difficulties, and there remained a large number for which no market could be found. This naturally induced the farmers to export their pigs in carcasses, and the co-operative curing houses which had already begun to be established in 1888 were greatly increased, and at the end of 1894 there were about 18 larger and smaller establishments spread in different parts of the country, the largest establishments slaughtering about 40,000 pigs a year." He adds that the co-operative curing houses are generally started by the farmers and others who breed swine in a particular district. The breeders unite together for the purpose of raising the money needed for the building and plant by signing sureties making themselves responsible for the payment of a certain amount for each pig cured. The bonds of security are deposited in the bank from which the necessary money is obtained. It is generally stipulated that the loan shall be paid off in the course of 10 years, and the curing house afterwards becomes the property of the shareholders in proportion to the number of pigs delivered. The shareholders bind themselves to send to the curing house all the swine they rear, and this obligation is strictly enforced by the imposition of severe fines in cases of breach of the agreement. At every curing house there is a shop for the sale of sausages, fat, etc. These shops, as a

rule, pay excellently, and form a great part of the profit of the curing houses, which, says the Vice-Consul, "as a whole may be said to work well."

Little wonder need be felt that Mr. Harald Faber can work free puffs from English newspapers when England's consul in Copenhagen knows nothing about Danish butter swindles. England has far too many Clans, and too little regard for native industries.

OUR DISCIPLES.

SEVERAL questions relating to the food supplies of the country were discussed at a conference arranged by the Agricultural Union, which was held this week at the Westminster Palace Hotel. Dr. A. T. Schofield presided, but before he formally opened the proceedings Mr. W. Pennington, of the Kensington Vestry, explained that the general object of the meeting was to endeavour to find out some way of providing the country with food in case of war. Some people would say their object was Protection. That was not so. They wanted to encourage the growth of English wheat, thinking it could be done, and that English wheat was more wholesome and went further than foreign wheat. (Hear, hear.) Mr. W. King, secretary to the Agricultural Union, stated that amongst those who had sent letters expressing sympathy with the movement were Lord Salisbury, the Duke of Westminster, the Duke of Devonshire, Lord Rosebery, the Earl of Rosslyn, Earl Fortescue, the Marquis of Lorne, Lord Claud Hamilton, Earl Stanhope, Mr. Walter Long, M.P., Sir Walter Foster, Sir Spencer Wells, and Mr. W. M. Crooks. Mr. H. S. Foster, M.P., moved: "That the decreasing cultivation of wheat is becoming a serious danger to the welfare and security of the country, and that some practical measures should be taken to create an increased demand for English wheat." He strongly urged that with our large population it was very desirable that we should grow more of our own supplies of food, so that we should not be so dependent for these supplies upon foreign countries. The resolution was seconded by Mr. Seton-Karr, M.P. Like the previous speaker, he expressed his sense of the importance of the question under discussion, but could offer no practical suggestions in furtherance of the object of the meeting. Mr. Foster said he was opposed to Protective duties on food. Mr. Seton-Karr, on the other hand, frankly avowed himself a Protectionist, and said he should invariably vote for Protection. With unconscious humour, however, he immediately added that he believed the industrial constituency he represented probably did not contain—so he said—five hundred educated persons. The chairman urged the increased growing of English wheat, on the ground of its superior hygienic value to foreign wheat. The resolution was carried, as also were the following:—"That it is desirable to institute a standard for flour and bread"; and "That it is imperative to put some further check on the adulteration of food and drink, and to prevent foreign wheat and other food from being sold as English."

We do not, of course, frank all this, but there is a germ of sense in it, and that germ is due to FOOD AND SANITATION.

"BURKERS" IN BERMONDSEY BAULKED.

WE congratulate Bermondsey on having turned over a new leaf. At the last meeting of its vestry Mr. Ecroyd obtained permission to call attention to the sanitary staff not sanctioned by the Local Government Board and move a resolution thereon. He said that the salaries affected amounted in the total to £1,200, and he could not see why £600 of that sum should not be repaid from the council funds. He considered that the sanction of the Local Government Board to these

appointments should be obtained, and moved accordingly.

Mr. Pridmore seconded the motion. He knew there was an opinion abroad that if this course was adopted the vestry would not obtain full control of their officers, but that was a mere bugbear. The only thing was that they could not discharge such officers without the consent of the Local Government Board.

Mr. Hall moved, as an amendment, that the vestry adhere to its resolution of April 1 last year, when they resolved that it would be indiscreet to place their officers under the Local Government Board and so lose control over them. He was sure that the evidence adduced before the vestry recently respecting an officer would not have been sufficient to have secured that man's discharge. An instance was recently given of the cuteness of a candidate who declined to accept office under the vestry when he found that the Local Government Board would not be asked to sanction the appointment.

Mr. Dumphreys seconded the amendment.

Mr. Glanville argued that if the vestry discharge men wrongfully an action would lie, whilst if an officer was worthy of dismissal the Local Government Board would not seek to retain him. He was not sure but that these officers must come under the central authority, because they are sanitary inspectors, and he believed they would save the £600, in spite of Mr. Hall and Mr. Dumphreys. (Hear, hear.) Other parishes had adopted this system, and Bermondsey had to contribute its portion to those salaries, and yet the vestry had obstinately declined to save the money spoken of.

Mr. Burton, although chairman of the committee which recommended that the vestry should not place its inspectors under the Local Government Board, had learned several things since that 1st of April, and had resolved to support the resolution since it would save £600 to the parish.

The amendment was put and lost, twelve voting in favour, and the resolution adopted amidst cheers.

This departure encourages us to hope that Bermondsey will have in future a little less Pharisaical sanitary sanctity, and that the purity of the food supply of the people will be diligently looked after.

SOMERSET HOUSE ELECTS TO DEFEND ITSELF.

MR. HEHNER'S trenchant exposure of Somerset House before the Select Committee on Adulteration has caused Somerset House to at last screw its courage to the sticking point. Well! Heaven help it, for if ever a body needed supernatural science the miserable, discredited department is that body. It has no natural science, as Mr. Hehner ably showed, and as FOOD AND SANITATION'S columns have for long afforded proofs. Four years ago, it was a "tin panjandrum on brass wheels"; to-day, the *Daily Telegraph* is found saying of it:—

An incident related to the House of Commons' Committee on Food Adulteration by Mr. Hehner, representing the Society of Public Analysts, shows on one occasion the genuineness of a certain manufacturer's alleged malt vinegar was called in question. The analyst for the local authority declared that malt did not enter into its composition. The maker himself admitted that this was so, yet when the sample was sent to the Somerset House analysts it was certified to be genuine malt vinegar. The other professional man was surprised, and so was the manufacturer. Mr. Hehner suggested that there should be a court of reference constituted, leaving the authorities of Somerset House the position of a court of appeal. Did not the incident he related go rather against the efficiency of such a tribunal?

The *Telegraph* is right. Mr. Hehner has always been too inclined to leniency with the wretched Somerset House enemies to English industries and *frankers* of food frauds. The department ought to go, lock, stock, and barrel, and never more disgrace

analysis with "denatured snuff frauds," lard swindles, wrong milk analyses, and the host of ignorant rubbish it has palmed off as truth. It has caused England to lose millions a year. Why keep it, then? It would be less harmful in a National Chamber of Horrors with *Lloyd's* 8 per cent. of water cow.

SPIRITS AS THEY ARE.

MR. LEO TAYLOR, the Public Analyst for Hackney, replying to a representative of *Cassell's Saturday Journal*, in answer to the question "There is a good deal of fraud in spirits, isn't there?" said: "Yes, there is. A very small proportion of the brandy sold in this country comes from France. Brandy, as you know, should be distilled from the grape, instead of which it is distilled from the domestic potato. What is done is this:—To a quantity of colourless spirit distilled from the potato is added some burnt sugar for colouring purposes. Then a flavouring essence is taken—either for making whisky, brandy, or rum—and when a few drops of either of these have been added you have your favourite poison." Mr. Taylor kindly brought out some of these essences for my inspection. They are a triumph of art. There before me was the rum essence with never a trace of rum in it—an instantaneous method of making rum on a desert island. I examined other essences. There was a "pear" essence which had never been within five miles of a pear-tree. There were also strawberry and raspberry essences for making pure—oh, so pure—strawberry and raspberry wines. Neither of these essences had had any connection with any sort of fruit whatever.

A Mr. William Bryant, of whose altruistic offers we have ere now given free advertisement, has recently published a work entitled, *Nineteenth Century Handbook of the Manufacture of Liquors, Wines and Cordials Without the Aid of Distillation*. This is another case of spirits called from the vasty deep of knavery, but, unlike those doubted of Shakespeare's, here they come. "Madeira Wine," as it is made of "good quality," is to be a concoction of 12 gallons of water, 1 gallon of honey, 1½ gallons of alcohol, 5 ounces of hops, 3 ounces of bitter almonds, three quarts of rum, and 4 ounces of mustard.

To make a brandy of a high-sounding name, you are to begin with 4 gallons of alcohol, 4 ounces of sugar dissolved in two pints of water, 1 ounce of catechu (powdered), ½ ounce of sulphuric acid, 1 ounce of butyric ether, and 20 drops of neroli.

These drinks being unfit for any civilised being, we commend to the scribe who writes paragraphs about adulteration for the *Daily News*.

THE SELECT COMMITTEE ON MINERAL OILS.

THE Select Committee on Petroleum has now been nominated. The following members have been selected:—Rt. Hon. Jesse Collings, Under-Secretary Home Office; Sir T. Carmichael (L.) (Midlothian); Alexander Cross (U.) (Camlachlie, Glasgow), of A. Cross and Sons, seed merchants, Glasgow; J. F. Flannery (U.) (Shipley); Col. Sir E. Hill (C.) (Bristol, S.); F. Wootton Isaacson (C.) (Stepney); J. Kenyon (C.) (Bury, Lancs.); Rt. Hon. A. J. Mundella (L.) (Brightside, Sheffield); H. F. Pollock (U.) (Spalding); Harold Reckitt (L.) (Brigg); J. Compton Rickitt (L.) (Scarborough); Sir J. B. Stone (C.) (Birmingham, E.); and J. Kelly (N.) (S. Leitrim).

The committee, it is understood, will enquire into the Lamp Scheme, now being diligently pushed by the rascally American oil gang, and into the uses of petroleum for locomotion. It is to be hoped they will enquire into the "nobbling" of the London Chamber of Commerce Mineral Oil Section. We shall

commence in our next issue a series of plain truths upon the practices of the American oil gang supplementary to our exposures of their infamies already published.

POISONOUS EFFECTS OF BORAX.

At the present time there are a vast number of preparations intended for the cure and preservation of foods, which depend for the claim advanced upon the large portion of sodium baborate contained. This fact has led Féré, of Paris—who has had considerable experience with the drug in the treatment of intractable cases of epilepsy—to investigate its physiological action.

He several times found it necessary to give large doses for long periods, and frequently met with persons who were peculiarly susceptible to the drug. The untoward effects were loss of appetite, succeeded by burning pain at the pit of the stomach, buccal dryness, and eventually nausea and vomiting. Also a remarkable dryness of the skin was produced which not only favoured, but in several instances caused, skin maladies, notably eczema; the hair also became dry and fell out, threatening complete baldness. The most dangerous result of the use of sodium baborate is its power to increase kidney disease, or to convert a slight renal malady into a fatal or malignant affection.

GERMS IN BOOKS.

FRENCH scientists, who have been carrying on a series of experiments in regard to the vitality of microbes in books and on general printed matter, report that germs of various kinds were cultivated from the printed matter of books, and that the corners of pages where touched by the fingers yielded the most prolific results. It was shown that disease-bearing germs, such as those of diphtheria and erysipelas, retained their vitality, and were capable of causing the dissemination of the diseases.

A DEPUTATION ON THE BEER SWINDLE.

THE following excuses for imposition were made on March 23 by a misguided body called a deputation from the Central Board of the Licensed Victuallers' Central Protection Society of London, which waited by appointment upon Sir Michael Hicks-Beach, M.P., Chancellor of the Exchequer, for the purpose of submitting the views of the retail trade in opposition to the Pure Beer Bill down for second reading in the House of Commons on Wednesday last. The deputation, which consisted of Mr. Charles Walker (chairman), Mr. Charles Deakin (vice-chairman), Mr. S. H. Baker, Mr. Alderman G. W. Kidd, Mr. J. Myerscough, Mr. G. B. Worth (trustees), Messrs. E. Johnson and W. Prevost (members of the board), and A. B. Deane (secretary), was courteously received by the Chancellor of the Exchequer at the Treasury in Whitehall.

Mr. Charles Walker, who acted as spokesman, said:—Sir, the deputation directly represents the whole of the retail trade within the metropolitan district—a radius of thirty miles from Charing-cross. The deputation desire this interview in order to place before you their views in opposition to the Bill introduced into the House of Commons entitled the "Pure Beer Bill," or, in other words, a Bill for better securing the purity of beer. They first ask permission to suggest that the title of the

Bill is a misnomer, and that it is calculated to mislead and to imply that the beer now retailed is impure and adulterated. We, therefore, respectfully, as retailers, submit our opinion, namely, that the beer now sold is pure, and in support of this we would refer to the answer given by the Chancellor of the Exchequer (Sir W. Harcourt) on March 10, 1893. It is as follows:—"There were 2,044 samples of beer analysed for the detection of adulteration during the past financial year. In no case was the existence of a noxious ingredient found." Speaking from long experience, sir, the gentlemen before you are here to testify to the fact that the beer the retailers now offer for sale to the public has never given greater satisfaction, and they are ready to affirm that in their opinion the beer of to-day is less intoxicating than the beer sold twenty years ago. Further, that the beer of to-day is fresh, bright, clean and invigorating, the assumption being that more care, skill, knowledge and cleanliness are exercised in the brewing, storing, and in the time of delivery, so that the passage between the producer and the consumer has been made considerably shorter. The board fear that this measure, should it become law, will have a disposition to impair and unsettle again the value of licensed property. The deputation submit that the tendency of the Bill is immoral, inasmuch as it affords opportunity, if not encouragement, to the dishonest trader, by permitting two classes of beer brewed from different ingredients at varying cost to enter the retailers' cellar at one and the same time, by no protection being afforded the consumer. True it may be said provision is made for the protection of the public by compelling the retailer to exhibit in his bar a notice specifying the material from which the liquor retailed at his establishment is brewed. We are here to-day to say that in the event of a necessitous change the trade would prefer that the so-named imitation article in the Bill be not permitted to be brewed at all. It would be much better for the public and the trade that it be clearly understood that only certain ingredients are to be used in the brewing of beer, and that anything else used would be illegal. Finally, sir, as traders we perceive no necessity for this Bill, and should it pass into law it will not give to the public the least benefit nor to the teetotal cause the slightest advantage, and will only create irritation and annoyance.

Mr. Chas. Deakin said there were one or two points which the chairman had not referred to, and one of the most important was the clause giving half the fine to the informer. It was practically recreating the common informer—a most offensive and obnoxious person—which it had taken the trade some years to get rid of. He further stated that in the opinion of the retail trade there was no necessity for a Bill to prevent adulteration, as the existing Acts already did all that was necessary. There was the Deleterious Ingredient Act, passed many years ago, under which there had never been a single conviction, showing how unnecessary it was; and the public were further protected by the Inland Revenue Act and the Sale of Food and Drugs Act. Whilst the trade were anxious to encourage anything that would give the public pure beer, they felt, looking at these various Acts, that the public were more than protected against any adulteration. With regard to the posting of notices, the retail trade feel that the whole of the penalties would fall upon them, and the fact of having to publish notices in their bars was a matter that would cause a vast amount of irritation and trouble to the retailer. The licensed victualler in London might be selling beer from four breweries—London, Yarmouth, Burton, and Scotch beer—all of which might be brewed in a different manner, and would necessitate separate notices being put up in the bars.

The Chancellor of the Exchequer having remarked that the Bill to which attention had been called by the deputation was not a Government, but a private member's Bill, expressed his pleasure at seeing the deputation, and promised that the reasons which had been advanced by them should receive his most careful consideration.

It passes us why these gentlemen should take this trouble for the bolstering-up of a swindle on the publican as well as the consumer. The bulk of publicans, like the consumer, pay practically the same price for "swipes" to-day that they paid years ago for genuine beer—brewed from malt hops and yeast. The Licensed Victuallers' interests lie not in supporting the use of rice, sugar, chiretta, etc., grown by Chinese or niggers, but in encouraging employment for those who earn a living in England; and in this excuse Mr. Walker and his friends are either tools of the brewers who use these swipy substitutes, or they are the most deluded of tradesmen.

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THE "MEDICAL TIMES AND HOSPITAL GAZETTE" ON OURSELVES AND THE "LANCET."

In its last issue our contemporary says:—

"An amusing and somewhat edifying passage of arms is taking place between the weekly journal called *FOOD AND SANITATION* and the *Lancet*. As long ago as 1878 the *Lancet* published the following laudatory notice respecting 'Valentine's Meat Juice': 'Not only is the flavour of the meat admirably preserved, but the albumen of the juice is retained in perfect solution, as is proved by the ease with which it coagulates on boiling or mixing with dilute nitric acid. The preparation is, therefore, most valuable both as a stimulant and food, and we have no hesitation in recommending it highly. In 1893 and 1895 analyses were made of the meat juice in question for the editor of *FOOD AND SANITATION* by Mr. Otto Hehner, and in consequence of the small percentage of nutrient matter found in the preparation, the editor exposed what he describes as the 'humbugging eulogies' published in the *Lancet*. Instead of being "most valuable as a stimulant and food," the editor of *FOOD AND SANITATION* says it is "an ordinary meat extract diluted with water, but as far as nutrient value goes the water in which dinner plates are washed would be about as valuable." This startling assertion evidently alarmed many medical men who, probably relying on the *Lancet's* report, had been recommending Valentine's juice for years past, for some of them have communicated with the editors on the subject. On this the editors of the *Lancet* challenged the editor of *FOOD AND SANITATION* to appoint, subject to their approval, an analyst to make an independent examination of the preparation.

"This challenge, however, the Editor of *FOOD AND SANITATION* characterises as an attempt to beg the question, and he says:—'We would not insult Mr. Hehner's unquestioned pre-eminence in the analytical world by supposing that anyone connected with the *Lancet* or who would, forsooth, meet with the *Lancet's* approval, would have the ability to correct or disprove the accuracy of an analysis made by Mr. Hehner. The second analysis was directed solely to discover if there had been any change for the better in the nutrient value of Valentine's Meat Juice, and the following was the result:—Gelatine 0.62, peptone 2.93, albumen 0.10, i.e., the actual amount of albumen yielded was only a tenth of one per cent. Having thus convicted the *Lancet* on all counts, we must deny in toto the *Lancet's* smug assumption that it is "a superior journal." Mr. Pecksniff was superior until he was found out, and if there be any superiority about the *Lancet* it lies in the strength of its advertisement pages, which may explain the weakness of its analyses. The *Lancet* moans we do not know how to conduct a controversy. Like Sir Andrew Aguecheek, our contemporary, doubtless, feels inclined to exclaim, "Plague on't! An I had known he had been valiant and so cunning in fence I'd have seen him damned ere I'd have challenged him"; and had the *Lancet's* challenge and tone not been designedly offensive, we would have shown it more mercy, for we willingly recognise that the *Lancet*, outside of its analyses and wretched Lamp Explosion Commission trash, has done some admirable work, and that if its editors be not extra intelligent they are in the main well meaning.' And so the quarrel stands for the present. It will be interesting to watch future developments."

There will be no future "developments." The *Lancet* has "eaten the leek"; its business is to imitate Brer Rabbit and "lay low," and we do not suppose it will ever dare again to contest any analysis we publish. But we may analyse some other *Lancet* analyses shortly, and we have a very fine selection of Carter's "Holborn Model," the thickest Leek known, which we may some day compel the *Lancet* to eat, in addition to the one which has already so troubled the *Lancet's* digestion.

WATER IN BUTTER.—IMPORTANT PROSECUTION.

At New Mills Petty Sessions on March 18th, before Messrs. J. Hibbert (presiding), T. Bennett, E. B. Rumney, J. Arnfield, and J. T. Gee, Mr. Charles Moss was charged at the New Mills Petty Sessions by Colonel W. A. Short, with selling butter containing 19 per cent. of water and 74 per cent. of butter fat, at Horwich End, Whaley Bridge, on the 21st January, 1896.—Colonel Short said that he did not think that the defendant had put the water in. "It was often the fault of the wholesale dealer. There was no standard with respect to butter and milk, but public analysts and Somerset House were of opinion that anything above 16 per cent. of water was adulteration.—William Marples said that on the 21st of January he went to the defendant's shop at Horwich End. He saw the defendant, and asked for half-pound of butter, for which he gave 7d. He asked for the best butter. He understood that he was getting the best butter, for which he asked. The defendant said he had no doubt that the butter was all that was to be expected. He handed the butter over to Colonel Short.—Cross-examined by Mr. Brown, of Buxton, Colonel Short said he should divide the butter into three parts, which he did, and gave defendant one, and defendant said the butter was all right, and he had no fear of the result.—Colonel Short said he received the sample of butter on the same date. He saw the defendant immediately after, and told him that he had bought the butter to have it analysed, that it was his intention to send it to the public analyst, and offered to divide it into three parts. The offer was accepted, which was done, and they were sealed up in the presence of the defendant. One he left with the defendant, the second he sent to the public analyst the next day, and the third he produced. He produced the certificate from the public

analyst. The report said the butter should have contained at least 80 per cent. of butter fat. The public analyst was Mr. John White, of Derby.—Cross-examined by Mr. Brown, witness said that there was no standard fixed.—Mr. John White said he was the public analyst for the County of Derby. He received a sample of butter on the 22nd of January. It was properly sealed and marked No. 87. He analysed the butter and found that it contained what was stated in the certificate. The amount of water was above the usual quantity, for 16 per cent. of water was a maximum under any circumstances, and that opinion was shared by public analysts. In his opinion, more than 16 per cent. of water might damage the butter and cause loss of weight by leakage. There was no more excess of water required from foreign butter than from English butter. The presence of so much water was a fraud upon the public, who were buying water instead of butter. He would not impute fraud to defendant, because a public analyst could not do so. It was not his duty. All butter contained water. If 19 per cent. of water was in a pound of butter, it would weigh about three ounces. If it was 16 per cent. of water it would make a difference of about half an ounce of water. Twelve per cent. of water was all that was necessary.—Mr. Brown said the defendant was a most respectable tradesman and bore an exemplary character. The matter of butter was in a most unsatisfactory state. He had read a case where there was 21 per cent. of water; the magistrates convicted, but the High Court quashed the conviction. Defendant might have defended himself by demanding a warranty, but not being a legal person, he never thought of such a thing. The wholesale dealer also got the butter without a warranty, the butter coming from Grimsby, and was imported from Hamburg. The defendant did not put the water in, and he hoped that the Bench would look at the matter in a lenient manner, and dismiss the case under the Summary Jurisdiction Act. The wholesale firm which supplied the butter had been supplying it for many years, and it was the first time that a case had been brought up about their butter.—Charles Moss said he was in business at Horwich End. It was the first summons that he had ever received in his life. He sold the butter in the same condition in which he received it, and he never added any water. The wholesale dealer said the butter was genuine, and was not adulterated. He did not know that he could have defended himself by a warranty.—Mr. John Barrowdale said he was a wholesale grocer, living at Stockport. He supplied defendant with the butter, which witness got from Messrs. John Duncan and Sons, of Manchester, and the butter came from Grimsby, and was made in Germany. As far as he knew, the butter supplied from the firm was all right. Samples had been taken of the butter, but no prosecution had ever followed. He sold the butter in all good faith.—Mr. Duncan said he supplied the butter to Mr. Barrowdale. He sent the butter on to the defendant right from Grimsby, and it never passed through their hands. Hundreds of samples had been taken, but never before had a prosecution been taken. The firm had a letter from Somerset House, which said that it contained 18 per cent. of water. They could not guarantee themselves to always get the same per cent. of water. The weather made a great deal of difference.—A long deliberation of the Bench ensued, and Mr. White, the analyst, was recalled. In reply to the chairman, he said that there was three or four per cent. of salt in the butter, but the salt would not cause the extra amount of water. It could not do.—Mr. Gee: Then you think that the water was owing to insufficient working?—Mr. White: Yes.—The Chairman: What was the lowest amount of water you have found in butter?—Mr. White: About eight or nine per cent. and the highest 25 per cent.—The Chairman said that they had decided to fine defendant 1s. and costs, though they did not think that defendant had put the water in, yet he was responsible. In any future cases the fine would be heavier.—The Clerk said that they did not impute any fraud to the defendant, and that ought to go forth to the public.—The Chairman said that notices must be sent to the grocers.—The costs amounted to £1 5s. 6d.

UNSOUND ORANGES.

At Worship-street, on March 20, Morris Blow, of Zion-square, Commercial-road, E., was summoned before Mr. Mead, by the sanitary authority of Whitechapel, for exposing for sale a quantity of oranges which were unsound and unfit for human food.—Mr. Talbot, barrister, appeared in support of the summons; Mr. Myers, solicitor, defending.—The evidence of Sanitary Inspector Harvey showed that the oranges in question, four boxes, were seized with 30 others at Spitalfields-market, the whole being rotten, and some green with fungus. They were condemned at this court and destroyed by the parish.—For the defence Mr. Myers said the defendant bought of Keeling and Hunts, wholesale fruiterers, and had to take his goods from the bulk, having no opportunity of examining the boxes beforehand, only a sample being shown. On the morning in question he, on sorting his purchase filled four boxes with rotten fruit, which was known by the name of "squash." It was usual to pay the parish 6d. per box for removing "squash," and they were left until removal in the market street. On this occasion they were seized as exposed for sale, but exposure was denied, and in proof of that it was said that the market toll on each box (2d) was not paid.—The hearing occupied a long time, Mr. Mead, the magistrate, saying it was an important case for the public, in view of the fact that thirty-four cases of oranges were seized at once. He, however, came to the conclusion that the defendant had made out his case. He dismissed the summons, but refused defendant's costs, as the sanitary authority had acted rightly in seizing such a mass of rotten stuff.

FOOD AND DRUGS ACT APPLIED TO COAL.

THE action Gillespie Bros. v. Cheney, Eggar, and Forrester, which came before the Lord Chief Justice on March 17, sitting without a jury, raised a question incidentally as to the fitness of Cyfarthfa coal, shipped at Swansea, for bunkering steamships and men of war. The action was brought by plaintiffs, general merchants, against defendants, local coal commission agents, to recover damages for breach of warrants in the supply of 500 tons of coal which plaintiffs had sent out to Barbadoes. The plaintiffs' case was that, having had a letter from a Barbadian firm, which stipulated that they must have coal fit for bunkering steamships and men-of-war, and that it would be desirable to have a class standing high on the Admiralty list, defendants, knowing the stipulation, stated Cyfarthfa-Merthyr coal would meet the requirements of the case, and they proposed to supply that coal. On arrival at Barbadoes complaints were made as to the coal supplied, and there was a claim for £600 damages in respect to one vessel, which had to put into port to obtain other coal. Defendants' case was that they undertook to supply Cyfarthfa-Merthyr Coal Colliery screened coal, which they did supply, the coal being well-known steam coal, though requiring a good draught.—Mr. Cohen appeared for plaintiffs, and Mr. Bingham, Q.C., for defendants.—His Lordship, in giving judgment, took Mr. Cohen's view of the case, and held that Chap. 71, Section 14, of the Sale of Food and Drugs Act applied in this case. He held that this section applied, the defendants having been made acquainted with the purpose for which the coal was to be used. Assuming, therefore, that the coal was not reasonably fit for the purpose, the plaintiffs were entitled to judgment upon this issue of warranty.—Judgment for plaintiffs accordingly.

UN SOUND HAMS.

JAMES HOSKYNs, provision dealer, City-road, Hulme, was summoned, at Manchester, on March 18th, for exposing for sale a piece of bacon and 13 hams which were unfit for human consumption. The total weight of meat was 158lbs. One of the hams was hanging outside the defendant's shop, and was for sale at the rate of 2d. per lb. The hams and the piece of bacon were seized on the 4th inst., and when seen by the magistrates were condemned as unfit for human food.—The defendant now said he did not know that the hams were unsound, and he thought that their condition must have been due to the heat of the shop. He added that he had no complaints about the hams.—Mr. Armitage (the presiding magistrate): Very likely; the people who bought some of the hams are all dead.—The defendant had been previously cautioned.—A fine of £10 and costs was imposed; in default, two months' imprisonment.

A QUESTION OF WARRANTY.

AT the South-Western Police-court, on March 20, an important question, dealing with wholesale vendors of milk, came before Mr. Lane, Q.C. It arose out of a summons against George Aubrey Reaks, who carried on an extensive business as a wholesale dealer of milk, at Stow Easton, Bath, for giving a false warranty to a retailer, the prosecutors being the Surrey County Council.—Mr. Powell supported the summons on behalf of the Council, while Mr. George Bell defended.—It appeared that, in February last, Arthur Handsley, of the Callow Park Dairy Company, was summoned before the Wimbledon Justices for selling milk which, according to the analyst's certificate, contained a deficiency of 15 per cent. of butter fat. The summons was dismissed, the defendant having produced a warranty in the shape of a written agreement and a label, which he had received from Mr. Reaks, the present defendant, and the dealer who supplied him with milk.—Mr. Lane pointed out that it had been held that there must be a warranty with each, and separate delivery.—Mr. Powell referred to a decision in the Court of Queen's Bench, holding as it did that a label attached to the churns, together with an agreement from the wholesale dealer to supply genuine milk, constituted a warranty.—Mr. Lane agreed that a label such as the one which had been produced was a warranty if it could be proved that the signature attached to it was that of the defendant Reaks. This point had not been proved.—Mr. Powell contended that it had been decided that a signature to the label was unnecessary.—Ultimately the summons was adjourned for Mr. Lane to look into the cases with reference to the latter contention.

PROSECUTING THE FARMER.

AT Birmingham Police-court on March 20, Harriet Kirk, Paradise Farm, Needwood, Burton-on-Trent, was summoned for having delivered milk deficient of 26 per cent. of cream.—Mr. Hiley prosecuted, and Mr. P. Baker defended.—Defendant consigned from forty to sixty gallons of milk daily, under a warranty of its genuineness, to the North Stafford Dairy Company, Tennant-street, and on the 2nd inst. samples were taken for analysis from three of the churns which were waiting at New-street Station.—The certificate showed that the milk was deficient of 26 per cent. of natural fat.—The defence was that the milk was not tampered with at defendant's farm, and that it was delivered at the station for consignment in a perfectly genuine state. The good character borne by defendant was also urged as a point in her favour.—The Bench said that small dealers must be protected. They had taken into account the excellent character borne by the defendant and the heavy costs which had been incurred in obtaining the presence of certain witnesses. They should fine the defendant 20s., and £2 on account of costs.

ABOUT THE FORM OF AN ANALYST'S CERTIFICATE.

AT the South-Western Police-court Hugh Jewson, a dairyman, of 62, Honeywell-road, Wandsworth-common, answered a summons, at the instance of the Wandsworth District Board of Works, for selling adulterated milk. The certificate of the analyst was produced, certifying that the sample of milk contained 9 per cent. of extraneous water. Mr. George Bell, for the defendant, maintained that the summons must fail, on the ground that the certificate was faulty and incomplete. In the case of "Fortune v. Hanson," recently heard in the Queen's Bench Division, it was then held that the analyst must state in his certificate the amount of water (not extraneous water) added to the milk. Mr. Sheil said small distinctions were often drawn, but not in accordance with common sense. Mr. Justice Hawkins had held that the court ought to be informed of the total amount of water to be found in a sample of milk. It was not sufficient to say that water had been added. Mr. W. W. Young (for the Board of Works): That would be an impossibility. Mr. Sheil: If it is so, the Legislature must alter it, and not me. Mr. Bell assumed that the analyst did not mention the added water, because the appearance of the milk was consistent with its natural poorness. Mr. Sheil observed that analysts' certificates seemed to be drawn in the interests of lawyers (laughter). They were framed with a great deal of ingenuity. He came to the conclusion that the milk had been adulterated, and imposed a penalty of 10s., in addition to 12s. 6d. costs. He, at the same time, suggested that the analyst should mention in his certificate the amount of water to be found in milk, together with the percentage of added water, in order to comply with the recent decision of the Judges.

BUTTER.

AT Lambeth, on March 19, William Jones, of Stockwell-road, was summoned at the instance of the Lambeth Vestry for selling butter not of the nature, substance, and quality of the article demanded by the purchaser, inasmuch as it contained 50 per cent. of margarine.—Mr. Ricketts, jun. defended.—Herbert T. Wiggs, an inspector under the Food and Drugs Acts, stated that he visited the defendant's premises on February 27, and asked for half a pound of butter out of a tub which was facing him. He was served, and paid sixpence. He submitted the sample to the public analyst, who certified it to contain 50 per cent. of margarine.—Mr. Ricketts: You are certain you mentioned butter? Did you say "I will have half a pound of that"?—Witness: No. I asked for half a pound of butter. He had taken other samples from the shop, but had never found anything wrong before.—A young man named Emerson, an assistant to the last witness, was called to corroborate this evidence.—In cross-examination by Mr. Ricketts, the Witness said the Defendant's wife wanted to serve the inspector out of one tub, but the Inspector refused to have it, and pointed to another tub, and exclaimed, "Give me half-a-pound of that."—Mr. Ricketts submitted that the Inspector was not prejudiced by the purchase. He asked for "half-a-pound of that," and got it.—Mr. Denman: As the evidence stands at present I have no doubt it was a sale of butter.—For the defence Mrs. Jones said the Inspector asked for "half-a-pound out of that cask." Witness told him it was not pure butter.—Mr. Denman: Why did you say that if he did not ask for butter?—Witness: Well, he may have asked for butter; I'm not sure.—Mr. Denman ordered the defendant to pay a penalty of 40s. and costs.

TARTARIC ACID.

AT Devizes, on March 18, Frank Beardsley, inspector of the Wilts County Council, summoned Alfred W. Godfrey, manager of the Devizes branch of the International Tea Company, for selling a quantity of tartaric acid which was not of the quality demanded. Mr. Cruttwell appeared for the County Council, and Mr. F. W. Beck for the defence. Ernest Thomas, assistant to Beardsley, proved buying four ounces of tartaric acid for 4d. at defendant's shop on February 14. Mr. Beck admitted the sale. J. W. Gatehouse, analyst to the Wilts County Council, living at Bath, deposed to making an analysis of the sample sent to him. He found it to consist of 45 per cent. of tartaric acid, 51.80 per cent. of potassium bi-tartrate (cream of tartar), and 3.20 per cent. of residue (calcium tartrate). It was very impure, and only possessed two-thirds of the efficacy of pure tartaric acid. It was not injurious to health. The defence was that no injury was done to the purchaser, nothing was added by way of adulteration, and the only result was that a larger quantity would have to be used, for which there was an equivalent in the reduced price. The proprietors had received a guarantee with this cask of tartaric acid. The Bench inflicted a fine of £1, and £2 13s. 6d. costs, which included solicitor's and analyst's fees.

PAUPERS' MILK.

THOMAS DAGG, 84, Prussia-street, Dublin, was summoned at the Southern Divisional Police-court before Mr. Swift, by the Public Health Committee, through their inspector, Mr. Frazer, Master of the South Dublin Union, for alleged offences under the Food and Drugs Act. In two summonses he was charged with abstracting fats from milk he supplied to the South Union Workhouse, and in a third with adding water to milk sent to the same institution.—He was fined £5 on each summons.

Mr. Swift would have done better had he inflicted the full penalty.

£50 OR THREE MONTHS FOR UNSOUND MEAT.

At Clerkenwell, on March 19, before Mr. Bros, Vials William Marriott, of 15, Wales-street, Rothwell, near Kettering, was summoned by Sanitary Inspector Billing, of the Holborn Board of Works, for having on the 8th of February, deposited for the purpose of sale, at 93, Cowcross-street, ten pieces of beef intended for the food of man which were diseased and unfit for human consumption. Mr. Courthouse Munroe, instructed by Mr. Matthew Hale, prosecuted, and Mr. Rendal Moore defended. It appeared that the inspector's attention was called to the meat by Mr. Corne, butcher, of 93, Cowcross-street. Along with the meat was sent a letter from the defendant, stating that he forwarded two carcasses, "one pretty good," and "one pretty bad," and expressing the hope that Mr. Corne could dispose of them. Dr. Bond, the medical officer, said all the meat was diseased. It was emaciated in one case, and the kidneys were congested. Mr. Moore said the defendant sent the meat up as "plain"—or poor—meat. He believed it to be wholesome. The letter was that of a poor countryman. Mr. Bros said that at least in one case the defendant knew the meat was bad. He imposed the full penalty of £50, or three months' imprisonment.

ADULTERATION IN PADDINGTON.

MR. A. W. STOKES, F.C.S., F.I.C., public analyst for Paddington, in his report for the past year, states that he analysed 363 samples of various kinds of food and drink, with the result that only 10 samples of milk, 2 of groceries, 2 of butter, and 1 of spirits were found to be adulterated. The percentage of adulterations to articles analysed was 4 per cent. Milk retailers, when charged with adulteration, frequently pleaded that the milk they sold was vended precisely as they received it from the country farmers, but analysis of the contents of milk-cans as they reached the railway termini at Paddington showed that not one sample was adulterated. Adulteration of milk varied with different days. Adulterated samples purchased at shops on Sundays averaged 12 per cent., whereas on week-days the average was only 7 per cent.

EAST SUSSEX MAKES A GOOD APPOINTMENT.

THE East Sussex County Council have appointed Mr. Thomas Latham, of Park-road, Polsoe Park, Exeter, inspector of weights and measures for the Exeter district of the county of Devon, as inspector for the Rye district of Sussex, at a salary of £175 per annum. There were no applications for the post. The same report of the committee recommended that the Lewes and Rye inspectors should be directed, until further orders, to procure twenty samples of food and drugs each quarter. This was also confirmed by the Council. The latter recommendation comes into operation on March 1.

But twenty samples for Lewes and Rye are scarcely adequate. However, the inhabitants should, we suppose, be thankful if only for small mercies.

The Sussex Dairy Farmers' Association recently sent a resolution to all the sanitary authorities in the county requesting them to order a more frequent testing of samples of dairy produce sold in the county in order to prevent, as much as possible, the adulteration of these goods. This came before the Steyning East Rural District Council at their meeting last week, and the clerk was instructed when acknowledging its receipt to state that the matter was already receiving their attention.

EXPERIMENTS WITH POTATOES AND TOMATOES.

THE following extract from our contemporary, the *Fruiterer and Market Gardener*, may be of interest to some of our readers:—"The curious effect of grafting tomatoes and potatoes has been shown by recent experiments. Two tubers were planted in separate pots in March, and when about 4 inches or 5 inches high the plant was cut off $\frac{1}{2}$ -inch from the level of the soil, and a graft of a tomato plant introduced in May. The result of this was that the potato, nourished by the tomato plant above ground produced a crop of potatoes in the pot, and also the tomato plant above ground produced a fairly good crop of tomatoes, nourished by the potato roots in the pot. This process was reversed with even more curious effect. The tomato plant was cut off $\frac{1}{2}$ inch above the surface, and the potato graft introduced. The tomato roots did not, of course, produce potatoes, but the potato plant above ground produced one truss of flowers and seven berries, and in order to extend this somewhat interesting experiment, the tomato flowers have been fertilised with potato pollen and the potato flowers with tomato pollen for further experiment next year. On examining the plant recently it was found that two of the potatoes growing on tomato stalks appeared suddenly to be aware of the fact, and although producing flowers and berries, they had not yet produced tubers, and it being "never too late to mend," they produced tubers from the axils of the leaves and stems.

CORRESPONDENCE.

THE DANGERS OF PETROLEUM.—LAMPS v. OIL.

To the Editor of FOOD AND SANITATION.

SIR,—The report recently issued by the London County Council embodying the regulations they propose to impose on the oil lamp industry threatens to sacrifice this industry to the interests of a *coterie* of oil magnates. The matter is one of great moment to the trade and deserves immediate attention. Personally I have solely a scientific interest in the question, and it is on this ground that I venture to ask space in which to briefly state the main bearings of the present position.

For thirty-four years a number of scientific men have been endeavouring to get the flash point of burning oil raised to a temperature fairly well above the ordinary summer heat of this country. In 1862 there was a widespread opinion that the old *open* test of 100 deg. F. was too low to be safe. After a great number of experiments Sir F. Abel devised a test and apparatus that for practical purposes was all that could be desired. In some "inexplicable" way however the Government were led to lose sight of the original complaint, and were persuaded to fix on a temperature that by the Abel (*close*) test was the equivalent of the old 100 deg. *open* test, and that temperature was the present standard of 73 deg. F. (Abel.)

The lamp theory was never heard of thought of until a few years ago. At that time, the low flash party saw that the flash point question was becoming unpleasantly prominent, because the number of accidents was rapidly increasing, and the public began to realise that the present 73 deg. F. Abel test was but the exact equivalent of the long ago condemned 100 deg. *open* test. Consequently, with truly masterly astuteness, the Standard Oil Co., and their Petroleum Association, suddenly began to find out that it was not a question of dangerous lamp-oils but dangerous oil-lamps. In order therefore to maintain their monopoly for the sale in this country of the dangerous oil that they cannot sell in the United States, they are now, through the London County Council, trying to divert attention, at the expense of the lamp trade.

If the matter is really one of the lamp, why do not the Petroleum Association invite the co-operation of the trade and settle the thing at once? They have had the opportunity in the past, but somehow the Petroleum Association did not seem to fancy the idea. The reason is now only too apparent, and shows they must have known full well that the honest discussion of the matter with the lamp makers would reveal the fact that no lamp was really safe with the Semi-Naphtha that is now sold as American Petroleum.

The Government insist on high flash oil for their own use, but think 73 deg. oil quite safe enough for the general public. At the same time, I absolutely fail to see the justice of inflicting such positive and wholesale restrictions on the lamp-making industry, when the chief objection raised by the Government against the raising of the standard to 100 deg. Abel test is that they believe such a step would hamper the American oil industry. Why not ascertain the truth for certainty? Further, if it is not right to protect the public against the use of dangerous oil let American industry suffer, why issue such rules and contemplate legislative measures that will assuredly cripple the English lamp trade?

The recent report that emanated from the London C. C., apart from all the recommendations about the lamps, distinctly admits that raising the flash-point would effectually prevent accidents if it were practicable. Presumably the supposition of impracticability is based on the fact that "raising the flash-point would not prevent the sale and use for illuminating purposes of oil below the flash-point"—i.e., the point fixed on, and presumably 100 deg. F. Abel test.

You cannot sell what you have not got, and if no burning oil below 100 deg. F. comes into this country, burning oil under 100 deg. F. Abel cannot be sold. Naphtha could be and is being sold, but it has to be sold as such. To vend naphtha as burning oil is practising a dangerous fraud.

I take it that at present no petroleum inspector would sanction the distribution of oil flashing below the Government standard of 73 deg. F. as petroleum burning oil, and that all oil below that point is subject to the regulations of the Petroleum Act of 1871.

I would now suggest that all oil under 100 deg. F. Abel test is treated in precisely the same way as all oil under 73 deg. F. Abel has been treated for years.

Wherein lies the impracticability?

It seems to me to lie wholly and solely in the fact that the Standard Oil Co. do not want the change, and so "dub" it impracticable. But I am not engaged just now in considering the whims and wishes of millionaires, but the daily safety of millions of British subjects of the middle and poorer classes. The report positively supports the principle of raising the flash point, and pronounces it to be an effectual preventive of accidents, but doubts its practicability. I should like to know how far the Chief Officer has sought the aid of those who were free and able to enlighten him on the latter point? His present state of ignorance is perhaps the most eloquent answer to this question.

With these facts staring the leading members of the lamp trade in the face, it will be a surprise to me if they submissively allow the L.C.C. to fasten such a burdensome yoke upon their necks. If they do, the British manufacturer of to-day is made of very different stuff to his forbears. All interested are invited to write to the undersigned.—Yours, etc.,

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COLEMAN'S
"WINCARNIS"
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LIEBIG'S EXTRACT OF MEAT & MALT WINE
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Food and Sanitation.

SATURDAY, APRIL 4TH, 1896.

THE COMPARATIVE NUTRIENT VALUE OF MEAT EXTRACTS.

ON December 14 last we published a series of analyses of meat extracts, giving the comparative value of the leading preparations recommended to the medical profession by the *Lancet* and other journals. They were full and unambiguous. The amount of stimulant and the amount of nutriment yielded by each were plainly stated, as follows :—

doubt their accuracy, but it did not dare to disclose who was responsible for the ignorant and misleading alleged analyses it published. As we like to give each side fair play, we publish in another column an explanation by Dr. Hill Shaw of a recent letter of his in the *Lancet*.

Reading Dr. Hill Shaw's explanation, we can only conclude that he did not read our article of December 14 which the *Lancet* questioned, as the article gave the precise tables showing extractives, stimulant, and nutrient value of each preparation as now published.

If he had known these facts, we do not suppose he would have given any credence to the *Lancet's* assertions. The *Lancet* did not dare to disclose who was responsible for the alleged analysis it published,

	Brand's Essence of Beef.	Liebig's Extract of Meat.	Valentine's Meat Juice.	Mason's Essence of Beef.	Armour's Extract of Meat.	Bovril for Invalids.
Quantity - - - - equals	2 ozs.	2 ozs.	2 ozs.		2 ozs.	2 ozs.
Cash (Store price) - - - at	9½d.	1/2½	3/-	11d.	1/1½	11d.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Water - - - - -	91·23	16·87	55·24	77·07	15·85	16·46
Ether Extract - - - - -	0·18	3·04	4·80	1·34	2·63	2·72
Albuminoids and Peptone with a small quantity of Gelatine (flesh formers) -	3·79	9·55	2·48	3·03	10·89	23·87
Creatin and Meat Extractives (almost non-nutritious) - - - - -	3·96	47·32	18·27	7·47	43·23	31·94
Mineral matters, Salts of Flesh Phosphates, etc. - - - - -	0·84	22·54	11·13	9·51	25·91	19·48
Non-nitrogenous Extractives - - - - -	None	0·68	8·08	1·58	1·49	5·53
	100·00	100·00	100·00	100·00	100·00	100·00

The above analyses were made for us by Mr. Otto Hehner, Past President of the Society of Public Analysts, and admittedly at the head of the analytical profession.

The *Lancet*, not knowing that the analyses we published were by Mr. Hehner, had the impertinence to

and the *Lancet* has not since had the temerity to question the accuracy of Mr. Hehner's analyses or his unquestioned pre-eminence as an analyst. If the *Lancet* can furnish its readers with an analysis by any analyst of repute showing that those made for us by Mr. Hehner are inaccurate, we will listen to it.

Enjoyed by Young and Old.

BIRD'S CUSTARD POWDER

Provides not only delicious Custard, but an endless variety of delightful, dainty dishes.

NO EGGS! NO TROUBLE! NO RISK!

Unless it does this we must adhere to our opinion that the analyses it publishes are ignorant and misleading, and that it dare not disclose the name of the analyst responsible for them, and that its challenge to us was bunkum.

Invalid Bovril has been greatly improved since these analyses were made.

IMPORTANT JUDGMENT BY MR. JUSTICE HAWKINS.

THE QUEEN V. HORACE SMITH AND DAVID KERR.

In this case Mr. Toller showed cause against a rule nisi being made absolute compelling the magistrate sitting at Clerkenwell Police-court to proceed to hear and determine the matter of two informations preferred by the inspector of nuisances for St. Mary, Islington, against David Kerr for giving false warranties on the 14th and 26th of June, 1895, in respect of two churns of milk sold by him to the Manor Farm Dairy, contrary to the provisions of section 27 of the Sale of Food and Drugs Act, 1875. The facts sufficiently appear from the judgment.

Mr. Macmorran, Q.C., appeared to support the rule.

Mr. Justice Hawkins delivered judgment on behalf of himself and Mr. Justice Kennedy. He said:—Saving the dates and that there was alleged to be less water added to the milk in the second case, the two cases are precisely similar in the material facts. I have dealt, therefore, with the first in order of time only. In June, 1895, a contract was in existence for the sale and delivery by the Manor Farm Dairy, whose premises are at East Finchley, in Middlesex, to the committee of the Great Northern Central Hospital at their premises in Holloway-road, in the parish of St. Mary, Islington. On June 15 Patrick Mernagh, inspector of nuisances, duly appointed for the said parish of St. Mary, Islington, procured at the said hospital premises, under the powers of Section 3 of the Food and Drugs Amendment Act, 1879, at the place of delivery there, a sample of milk which was then in course of delivery under the said contract. That sample was duly submitted to the public analyst for the said parish for analysis, and he, on June 22, certified "that the said sample contained 14 per cent. of added water." Upon this certificate an information was preferred, under Section 6 of the Act of 1875, by the said inspector against the dairy company, charging that they had sold to the prejudice of the hospital committee, the purchasers, the said milk, the same not being of the nature, substance, and quality demanded by such purchasers, in that it was adulterated to the extent of 14

per cent. of added water. This information came on to be heard on July 8 by Mr. Bros, the then sitting magistrate at the police-court, and on that hearing the dairy company proved to the satisfaction of the magistrate that they had purchased the milk as the same in nature, substance, and quality as that demanded of them, and with a written warranty to that effect; that they had no reason to believe at the time they sold it that it was otherwise; and that they sold it in the same state as when they purchased it. Upon this ground the prosecution against the dairy company was dismissed under Section 25 of the same Act. The said David Kerr was the vendor of the said milk to the dairy company. The churn containing it was sent by him from the Oakham Railway Station on June 14, addressed to the dairy company, with a label attached containing such a written warranty as above-mentioned, and it was delivered to the dairy company at the railway station at East Finchley, outside the parish of St. Mary, Islington, and also outside the district subject to the jurisdiction of the Clerkenwell Police-court. After the dismissal of the case against the dairy company, an information was preferred by the same inspector of nuisances against the said David Kerr under section 27 of the Food and Drugs Act, 1875, charging him with giving a false warranty in writing to the dairy company in respect of said churn of milk so sold and delivered by him to the dairy company. This information came on for hearing before Mr. Horace Smith, the sitting magistrate at the Clerkenwell Police-court, on July 20, but he declined to hear and determine it, on the ground that he had no jurisdiction so to do. It is beyond doubt that in fact neither the sale nor warranty nor the delivery to the dairy company was made within the limits of the Clerkenwell Police-court's district, and it was not suggested that any sample was taken of the milk at the place or during the course of delivery to the dairy company. Unless some enactment can be found altering the general rule of law that an offence must be prosecuted before a tribunal having jurisdiction to entertain it within the county or place in which it has been committed, the magistrate at the Clerkenwell Police-court had no jurisdiction over it. It is said, however, that such an enactment is to be found in section 20 of the Act of 1875. We are not of that opinion. Before I discuss that enactment, I desire to point out one or two matters essential to be borne in mind—namely, the offence charged against the dairy company was of a totally different character from that preferred against Kerr; that against the dairy company was framed under section 6 of the Act of 1875 for selling to the prejudice of the hospital committee milk which was not of the nature, substance, and quality of the article demanded by the purchasers. Under the circumstances stated no such offence could possibly be charged against Kerr, for he neither sold nor delivered any milk to the hospital committee. The information against Kerr was framed under section 27 of the same Act for giving a false warranty in writing to his purchasers, the dairy company, in respect of the milk sold by him to them. Let me now call attention to the words of section 20 of the Act of 1875:—"When the analyst, having analysed any article, shall have given his certificate of the result, from which it may appear that an offence against some one of the provisions of this Act"—(N.B.—I think this section must be read as if the words "or of section 3 of the Act of 1879" were inserted here)—"has been committed, the person causing the analysis to be made may take proceedings for the recovery of the penalty herein imposed for such an offence before any justices in petty sessions assembled having jurisdiction in the place where an article or drug sold was actually delivered to the purchasers"—I think that this part of the Act must be read as if the words "or the sample of milk was procured as mentioned in section 3 of the Act of 1879" were inserted here—"in a summary manner." It has been held that the certi-

cate of the analyst is a condition precedent to a prosecution under this section (see "*Peart v. Barstow*," 44 J.P., 699, and "*Smart v. Watts*" [1895], 1 Q.B., 219), and it seems to me not open to question that the words "When the analyst, having analysed any article," at the commencement of the section, must be interpreted to mean the official analyst, appointed under section 10 as analyst of all food and drugs sold within the district for which he is appointed, and the inspector of nuisances appointed for any district or place can only require the analyst (if there be one) for that district to analyse the suspected samples and give his certificate under section 13. We take it, therefore, that an inspector of nuisances could neither insist upon procuring a sample in a district for which he is not appointed, nor could an analyst not appointed to act for such district give any valid and effectual certificate of the result of his analysis under section 13. Section 18, which, with reference to the schedule to the Act, prescribes the form of the certificate, evidently contemplates an analysis by the local analyst of the article analysed as it is at the time it is delivered to him. Then comes section 20 under discussion, and, immediately following it, section 21, which enacts that at the hearing of the information in such proceeding (*i.e.*, the proceedings mentioned in section 20) the production of the certificate of the analysis shall be sufficient evidence of the facts therein stated, unless the defendant shall require that the analyst shall be called as a witness. All these provisions point, in our opinion, to the intention of the Legislature to provide for local inspectors, with power to obtain by local analysts analysis of questionable samples of articles of food or drugs sold within their districts, and to provide for the prosecution of offenders against the Act before justices of the peace having jurisdiction in the place where adulterated goods are actually delivered to the purchasers; but it never could have been in the contemplation of the Legislature to give justices jurisdiction to deal with persons offending against the Acts in other parts of the United Kingdom out of their jurisdiction. There are certainly no words expressive of such an intention to be found in section 20 or in any other section of the Acts either of 1875 or 1879. In this case no act tending to establish a violation by Kerr of the statutes I have discussed occurred within the jurisdiction of the Clerkenwell Police-court. The warranty was made at Oakham, the delivery by Kerr to the dairy company at Finchley. There was no sample of the milk taken by any inspector in the course of its delivery to the dairy company, and therefore there could be no such sample to analyse, and, even had there been, no analysis was made by any analyst appointed for the district of Finchley, and the analysis of a sample taken after the milk had been actually delivered to and received by the dairy company in a district where Kerr never had any control over the milk, and of which he had no knowledge, could not affect him, and the certificate given as the result of the analysis of such a sample could not, in our opinion, be any evidence as against Kerr. Moreover, though the certificate may have been evidence as against the dairy company that the sample taken at St. Mary's, Islington, while in the course of delivery by them to the hospital was adulterated, there was nothing on it from which it appeared that the offence of giving a false warranty was committed by the defendant Kerr at Oakham or anywhere else. Under all the circumstances, we are at a loss to see any ground for the contention that the Clerkenwell magistrate had any jurisdiction over the information against Kerr. It is only for such offence as appears by the certificate that any prosecution can be instituted under section 20. The rule, therefore, must be discharged. His Lordship added:—I wish, before concluding, to observe, with regard to the form of the certificate, that the analyst's duty is merely to analyse and report the result of the analysis, and he has no right, as I think, to report

extraneous facts unconnected with the analysis, and if he does so his certificate would, in my judgment, be inadmissible as evidence of such facts. In so far as it states in due form the result of the analysis the certificate is sufficient for the justices to act upon, unless the defendant requires the analyst to be called as a witness, or unless other evidence is adduced before the justices which induces them to come to the conclusion that it is incorrect. The expression used by me in my judgment in "*Fortune v. Hanson*" ([1896] 1 Q.B., 205) that the certificate is "practically conclusive" was intended only to convey the impression I entertained that in the vast majority of cases brought before justices no other evidence was offered of the impurity of the article, and to point out the great importance of insisting upon its containing all the material details of the analysis to enable the justices themselves to form a judgment on the question before them. Had I intended to do more I should have qualified my expression by what I have now stated.

PROTECTION IN PARLIAMENT.

THERE have been three Bills before the House of Commons, designed in the supposed interests of our farmers and landed classes, which call for the close attention of traders. Two of these Bills deal with meat (including bacon and hams) and cheese, and the third deals with the use of sugar in beer. The meat marking Bills taken together would oblige everyone who sells foreign or colonial meat to take out a license to do so, and to placard the fact in large letters on his place of business, and would also call for the distinct labelling of all colonial and foreign meat (including bacon and hams), however small the joint may be. The agriculturists think that foreign and colonial meat is at present largely palmed off on the public as English at 10d. or 1s. per pound, while it ought really to be sold as colonial, etc., at 6d. to 8d. per pound. If this be so, it follows that the difference in quality is so small that the public cannot detect it. How, then, would the farmer benefit if a prime New Zealand leg of mutton be offered at 8d. while 1s. is asked for similar English meat? Obviously, the sale of colonial meat would be enormously developed, while that of English would decrease and its wholesale price would fall, to the still further loss of the farmer. A strange delusion exists that English people would be willing to pay far more for produce grown at home. In the first place, stern necessity compels most consumers to buy as cheaply as possible, and in the next place there are very few who would throw away money for a sentiment. Besides there is a larger patriotism as well as a parochial one, and a great many would just as soon patronise the produce of Greater Britain as the growth of England, Scotland, or Ireland. Indeed, Mr. Chamberlain is good enough to suggest that, in the interests of the British Empire, we should tax ourselves in order to give more for colonial than for foreign produce. The fact is that no one would suffer more severely than our farmers if these Meat Bills were passed into law; and the result of the protectionist Merchandise Marks Act ought to have shown them this. Instead of benefiting English trade, the declaration "Made in Germany" has given foreign produce an enormous gratuitous advertisement, and has dealt a fatal blow to our home commerce. The authors of those disastrous measures are, however, not even yet satisfied with the havoc they have wrought on our trade, and have this week introduced a Bill for the compulsory marking of all imported produce, the marking hitherto having been optional. Sir Howard Vincent is said to have even "produced an egg" in the House, which was marked with its place of origin.

The position of shopkeepers who would have to brand

themselves as semi-criminals for selling meat, hams, or bacon, the produce of our own colonies, would be simply monstrous, particularly considering the burden thrown upon them in marking every mutton chop and rasher of bacon in letters of a certain size. If this were any use against fraud, some defence might be made; but, as a matter of fact, the present law is ample for this purpose—when it is enforced. If the agriculturists insisted on its enforcement throughout the whole country, as is now being sporadically done here and there with ham and bacon, false marking would very speedily come to an end. The new Bills, while acting as a splendid advertisement to non-English produce, would not, so far as we can see, in any way strengthen the protection of the public against fraud. Dishonest people could just as readily go on marking New Zealand mutton as English. Why, also, should meat and bacon only be singled out for compulsory marking? Why should bread, cakes, and biscuits not be treated in the same way, to say nothing of butter and eggs?

The "Pure Beer" Bill is based on a similar delusion, namely, that if the public knew that beer was made from sugar, they would demand in its place beer made from English malt. As a matter of fact, the contrary result would most probably follow, and the still existing demand for English barley would be injured or destroyed. The farmers are no doubt under the impression that beer is produced from malt; but, as a matter of fact, it is produced from the sugar which the malt contains. Owing to our comparatively sunless climate, our barley does not contain so much saccharine as foreign growths. This did not matter so much when the public put up with our old heavy ales, but now that they demand a more light and less heavy drink, it can only be prepared from something containing a great deal more saccharine than is to be found in English barley. This is the main cause of the increasing demand for sugar for brewing. If it is to be penalised, foreign barley will take the place of English, and the importation of German beer will largely increase—both, obviously, to the loss of the British farmer.

Apart from the proposal to throw agricultural rates on to the general taxpayer, the farmers are to have further protection in the compulsory slaughter of all foreign and colonial cattle at the port of entry. The object of this measure is to raise the cost of meat, but here again it is doubtful whether farmers would not lose more than they gain, because colonial store cattle would be excluded—rather a strange proposal to contrast with the idea of preferential treatment for our colonists. All these movements show that Protection is not dead in this country, but that it lurks even in Parliament. If we are to have this remedy for falling rents, let us have it unabashed, and let us put on a heavy import duty on colonial meat, on sugar used in brewing, on corn, and on foreign malt and barley. Protection, masking itself as an attack against fraud, which it cannot check, is not only a hypocrisy, but is far more injurious than the real thing would be.—*Produce Markets' Review.*

WHAT ADULTERATION COSTS.

"In discussing the subject of food production in the Nineteenth Century, I estimated that the milk produced in the United Kingdom amounted to 1,400,000,000 gallons annually, that of this prodigious volume 505,000,000 gallons are sold for consumption; that 610,000,000 gallons are utilised in the production of butter, 307,000,000 gallons in the manufacture of cheese, and the balance, allowing for the separated milk sold as new, in the manufacture of condensed milk. If we make every allowance for the loss of milk in the process of butter manufacture, the balance remaining in the

form of separated milk is still enormously larger than the actual quantity of new milk consumed, so that there are practically no bounds to the extent to which it is possible to adulterate new milk for sale. If only 1-10th of the milk now sold for consumption is adulterated, the loss to the farmer at 3d. per quart would be equal to more than £600,000 per annum. With regard to butter, the number of samples analysed at the instance of the Board of Agriculture, and the facts contained in the evidence before the Select Committee, suggest that at least one-fifth of the butter imported into this country is adulterated, thus underselling and displacing home production to the value of three millions sterling per annum. We are not in a position to even estimate the proportion of adulterated cheese which arrives at our ports. With regard to meat, if we take the value of that which is imported in various forms at £30,000,000 per annum, it follows that if only 10 per cent. displaces home-produced meat by misrepresentation, farmers suffer a gross loss of three millions sterling per annum. No doubt his produce finds a market in other directions, but usually at a loss. Apart, however, from this consideration, the fact remains that without estimating the losses by the fraudulent sale of cheese, condensed milk, and other materials, the sums which we have mentioned, when combined, are equal to a 5s. duty on all the wheat, and the flour estimated as wheat, which was imported during the past year."—Professor Long, in the *Western Mercury*.

SANITARY BURIAL.

At a meeting of the Church Burial, Funeral, and Mourning Reform Association, held last week at the Chapter House, St. Paul's Churchyard, the Archdeacon of London in the chair, papers were contributed by Sir Seymour Haden and Dr Poore on the earth-to-earth mode of burial. The former stated that for the last ten years he had been burying animals, large and small, in the park attached to his house. By digging them up and examining them, at intervals varying from one to five years, he found that, buried at the depth of four and a-half feet, the depth required by the Government for the burial of human bodies, an interval of from three to four years was necessary for complete re-solution; buried at the depth of one foot, a year and a-half had proved sufficient for the larger, and a year or less for the smaller animals. On the other hand, a body not buried at all, but simply laid upon the ground with a covering of earth a foot thick over it, had completely disappeared (the bones excepted) in a year, the mound of covering earth, which had been sufficient to prevent all smell, retaining its shape, but, when it was pressed with the foot, proving to be hollow. The body had thus returned to the atmosphere in the shape of oxygen, hydrogen, carbon, and other perfectly harmless products necessary for the nourishment and growth of plants. He (Sir Seymour Haden) was amazed at the folly, not to say impiety, of any attempt to beat this provision of nature. Dr. Poore, in his paper, contended that if a body were buried in such a manner as to further in every way its complete dissolution, the land would be ready, after due interval of time, to receive a second body, and that if the cemetery were systematically and sufficiently planted, the earth would be purified, and the air around freshened by the green leaves of a flourishing vegetation. The power which scientific burial gave of using the same ground repeatedly, after due intervals of about ten years, abolished the fear which had been expressed with regard to the amount of ground allotted for burial purposes. An acre of land would prove an ample area for a burial-ground in perpetuity for a population of ten thousand persons. Such a burial-ground would prove a decided benefit to the living, as supplying, in the midst of human habitations, a breathing-place, which is so essential to the general well-being. It was resolved, upon the motion of General Lowry, seconded by the Rev. Septimus Buss, R.D., to ask the Government to formulate into a Bill the recommendations of the Committee of Enquiry on Death Certification appointed by the late Home Secretary at the request of this Association; also to ask the Government to institute an inquiry into the effect upon the air above, the earth around, and the water below, of earth-to-earth burial, and other modes of interment.

CONVEYANCE AND SLAUGHTER OF CATTLE.

MR. BEMROSE, M.P., presided last week at a meeting at the Church House, Westminster, under the auspices of the Church Society for the Promotion of Kindness to Animals and the Church Sanitary Association. Mr. D. Tallerman, founder of the Agricultural Organising Agency, read a paper entitled "From Farm to Kitchen

through the Church," the title of which, he said, quaintly, but accurately, indicated a means by which farmers might be led to realise the position occupied by them. It was for the clergy, who had unique influence and authority in every parish in the land, to point out to farmers the duty they owe, first to their live stock, and then to the public, who expect wholesome meat at their hands. The serious depression in the farming interest was largely due to the neglect and ill-treatment of animals reared at home for human food, leading to disease, shrinkage in bulk, and deterioration in quality. The remedy lay in paying greater attention to the animals, improving the sanitation of store-yards and farm buildings, putting an end to the harassment of animals before slaughter, and making use of the facilities offered by the railway companies for conveyance. Farmers should combine with a view to killing their own stock near home, and thus avoid the shrinkage in weight and depreciation in quality which arose from carrying cattle long distances by train and then driving them through streets to be slaughtered. Instead of taking animals to the slaughter-house, the slaughter-house must be brought to the animals. An earnest appeal was made to the clergy to aid in this effort for the common good. Canon Reith moved a resolution to the effect that there was scope for much improvement in the laws and customs of this country in respect of the conveyance and slaughter of animals. Prebendary Harry Jones seconded the motion, which was carried. Dr. Foster Palmer moved that Her Majesty's Government should be asked to make such enquiries as they might deem proper to ascertain how far the health of animals was affected by the sanitary condition of store-houses and farm buildings, and what were the best and least painful modes of slaughter, the most efficient systems of inspection both of the animal and of the meat, and the best sanitary modes of conveying and storing meat. Dr. Cust seconded the motion, which was adopted. Commander Dawson moved that general approval be given to a memorial to the Government, asking for improved legislation respecting slaughter-houses. Mr. G. W. E. Russell, late Under-Secretary for the Home Department, in supporting the motion, said that his old friend and schoolfellow, Mr. Walter Long, the Head of the Agricultural Department, was in thorough sympathy with every effort for diminishing cruelty to animals, as were also the Home Secretary and Mr. Ritchie. He trusted Mr. Bismore would inaugurate his Parliamentary career by bringing in a Bill for the amelioration of the condition of animals intended for human food.

THE MINERAL OILS COMMITTEE.

A SELECT Committee of the House of Commons, presided over by the Right Hon. A. J. Mundella, sat on March 25 to inquire into questions connected with the use and storage of petroleum. Colonel Sir Vivian Majendie, Her Majesty's Chief Inspector of Explosives, who was the first witness, stated that the great mass of petroleum used in this country was not regulated in any way by law, but only that kind which had a flash point below 73° Fahr., close test. Thus, while the sale of that form of petroleum known as benzoline was regulated, that form which was burned in lamps was under no restriction. He was decidedly of opinion that the present law did not sufficiently provide for the public safety, even as regards that form of petroleum which was regulated. The law was very incomplete, and gravely deficient in elasticity. There was no statutory disability which could prevent anybody from storing any number of thousands of barrels in any part of London, or in any part of any other populous place. There was no regulation prescribing the use of suitable packages for the conveyance of the oil, and there was generally no power vested in any central authority to impose or require to be made regulations enjoining due precautions in the conveyance of petroleum, this being an omission which, in view of the increasing trade in bulk, was of a serious character.

MILK.

At Heywood, on March 25, Ann Stott was summoned for selling new milk which was not of the "nature, substance, and quality demanded."—Superintendent Noblett produced the analyst's certificate, which showed that the milk contained nine parts of water to every 100 parts of milk, and only 2.04 per cent. of fat and 7.74 per cent. of solids. The defendant said she did not know anything about the milk. She got it from Mr. Whitworth, the farmer, in the morning, and when the officer called it was in the afternoon. Thomas Whitworth, the farmer, was present in court, and, rising, objected to his name being brought into the prosecution. It was a most damaging thing to him. Superintendent Noblett asked him if he wished to give evidence, and he remarked that he would very much like to do so. He then entered the witness box, and said he had served the defendant with milk for a great many years, and there had never been a complaint before. He did not water the milk, and he believed the defendant was too honest to do so. The prosecution was a most unwarranted one, and ought never to have been instituted. The analyst's report is better than I expected, seeing that the milk stood for six hours, and the woman never stirred it up. The chairman said they were sorry to have to fine the defendant, but the public had to be protected. She would be fined 10s. and costs, and she would also have to pay the analyst's fee.

At Wolverhampton, on March 27, George Devey, milkseller, of Shreshill, was summoned by Mr. G. F. Allwood, the borough inspector under the Food and Drugs Act, for selling milk on February 10 which contained 26 per cent. of added water, and further, with selling milk containing 34 per cent. of added water on the 8th inst. The cases were proved, and the prisoner pleaded that he was a poor man, and ignorant of having committed the offences. The Stipendiary Magistrate (Mr. Neville) said these were the worse cases of the kind that he had had before him. He imposed a fine in each case of £5 and the costs, or two months' imprisonment.—John Barker, milkseller, of Bilston-road, Wolverhampton, was also summoned for a like offence, the added water in this case amounting to 23 per cent. It was stated that the defendant had bought the milk from the first-named defendant. A fine of £5 and the costs was imposed.

At the Wincanton Petty Sessions, W. E. Treasure, farmer, of Brewham, was summoned for selling to the West Surrey Central Dairy Company milk from which a portion of fat had been abstracted so to affect injuriously its quality.—Mr. J. Trevor-Davies prosecuted, and Mr. Sidney Watts, of Yeovil, defended.—Mr. Trevor-Davies, in opening the case, said the charge was under the 9th Section of the Food and Drugs Act, and alleged that defendant had abstracted from the milk fat so as to injure its quality. The charge was a serious one for the defendant because it went against his character as an honest man, and serious against his clients because they had purchased and paid for 760 gallons of milk from defendant. The contract between defendant and the company was reduced to writing, and Treasure agreed to supply guaranteed pure and unskimmed milk. Mr. Trevor-Davies detailed the evidence, and remarked that such factories as those of the West Surrey Central Dairy Company had come to the aid of the farmer, and had enabled thousands of farmers to carry on their business and pay their way, which otherwise they could not have done.—Richard Chaplin, an employee at the factory, said it was his duty to book the milk as it came from the various farmers. On February 15th Mr. Treasure brought two lots of milk in the morning, stating that one lot was the milk for the previous evening, and the other lot that morning's milk. It was their custom to test at intervals the milk, and Lister's Babcock test was used. On the morning in question he measured the milk, and took a Babcock's test. It only showed 2.50 per cent. of fat, whereas the average was 4, and he then took samples for submission to the County Analyst. He took three samples from that morning's milk, gave Mr. Treasure one, and sent one to the County Analyst. The certificate received showed the removal of 1.46 of fat, or practically one-half. The separator was cleaned, and the 6½ gallons of morning milk were separated, and it only produced 1½ lbs. of butter. The same quantity of milk should have produced about 3 lbs. The milk cost 6½d. per gallon, and therefore the 6½ gallons cost them 3s. 6d., whereas the butter fetched at market price 1s. 7½d. The skim milk would realise 1d. per gallon, thus showing a net loss of about 1s. 6d. on the transaction. On the 16th the milk was bad, and on the 20th, the last day of the contract, it was very bad indeed, only showing 2.60 per cent. of fat.—William Biggen, cheesemaker at the factory, gave corroborative testimony.—Mr. Gates, manager of the factory, produced the analyst's certificate, and said he sent the sample to the analyst, and wrote the letter accompanying it.—Mr. Watts, for the defence, said the prosecution was launched on a very high and penal Act, and it was incumbent on the prosecution to prove everything before his client could be called upon to give an answer. He should raise a preliminary objection that the name of the person who had caused the analysis did not appear on the summons, as required by the Act.—Mr. Trevor-Davies replied that his friend's objection could not be fatal, because the person who caused the analysis to be made was Chaplin.—The Bench over-ruled the objection, but placed a note of it on the depositions.—Mr. Watts, continuing his address, referred to the stainless character of his client, and commented on the fact that there was no intent on his part to defraud, and by the Act he was entitled to the dismissal of the summons.—Defendant said he had supplied the Salisbury and Semley Company with milk for seven or eight years, and never had any complaint about the quality. The first he heard of the analysis of his milk was on March 11, and therefore too late to get his sample analysed, although he sent it to a firm of chemists. On the morning in question he did not milk the cows, but received the milk from his servants. Whilst the milk was with him no fat was ever extracted from it. At that date he had six calves, and the milk having come from newly-calved cows it would deteriorate by one-half.—By Mr. Trevor-Davies: He did not know how many gallons of milk it would require to make one pound of butter.—John Boyce, a farmer, of Lamyatt, said the milk from newly-calved cows was not so good by one-half as that of old milk.—Cross-examined: He could not tell how many gallons of milk were required to make one pound of butter.—Joseph Burfit, farmer, of North Brewham, and Henry Dyke, a farmer, of Stoney Stoke, gave similar testimony, and both admitted in cross-examination that they did not know the quantity of milk required to make one pound of butter.—Mr. Gates was recalled, and said milk was certainly richer before calving, but it was impossible for after-calve milk to lose one-half its fat.—The Bench characterised the case as a weak one, but there had been abstraction, for which Mr. Treasure was responsible. He would be fined £1 and costs, and the Chairman added that he did not think the Company had acted in a very handsome way in not cautioning Mr. Treasure.

Stephen Hiscocks, of Wincanton, was summoned for selling adulterated milk on February 5.—P.S. Stuckey saw defendant

delivering milk in the High-street, and when witness asked him for a pint of milk he said he had none to spare. Witness, however, obtained a pint, and divided it into three portions.—Supt. Williams produced the certificate of Dr. Alford showing that the milk was adulterated to the extent of 9·7.—Defendant, who said he served the milk in precisely the same condition as it came from the cows, was fined £1, including costs.

At East Dereham, Jermyn W. Wigg, farmer, of Dereham, was charged under the Food and Drugs Act with selling milk to the prejudice of the purchaser on February 22. Defendant pleaded not guilty. Mr. E. E. Ransom (Girling and Ransom) appeared for the defendant. Superintendent Chambers said that on the day in question he purchased a quart of milk of Richard Spelman. After witness had paid him for it, he told him that it had been purchased for the purpose of sending it to the public analyst, and asked the man if he should divide it into three parts. After so doing witness sealed up the three bottles. One sample witness gave to Spelman, another he delivered to Mr. Sutton, the public analyst, at Norwich, on the same day, and the other he kept in his own possession. On March 22 the superintendent received the report from Mr. Sutton, who declared that the specific gravity was 10·32; it was composed of butter fat 2·57 per cent., non-fatty solids 8·66 per cent., water 88·77 per cent. The sample had undergone no change likely to interfere with the analysis. He was of opinion that at least 15 per cent. had been extracted by skimming. This was the case for the prosecution. Mr. Ransom then called Mrs. Wigg, wife of the defendant, who stated that she had charge of the dairy. They did not keep a separator, and nothing was done to damage the quality of the milk. Mr. Ransom contended that if anything was found wrong with the milk it was not in accordance with defendant's wishes. The man Spelman was not to be relied upon, and consequently Mr. Wigg had dismissed him. The Chairman said the plea of an untrustworthy servant would not do. The Bench imposed a penalty of £1 and 11s. 6d. costs.

At Leeds, on March 26, John Spencer, of 76, Woodhouse-street, Leeds, was fined 10s. for selling adulterated milk. Defendant explained that he had bought the milk in the condition in which it was found. Inspector Walker proved the case.

THE PREVALENCE OF MILK ADULTERATION.

LAST week, Thomas Edwards, of 52, Isledon-road, Holloway, was summoned for selling milk which was found, when analysed, to be adulterated with 5 per cent. of added water. Defendant said he sold the milk as he received it. Ordered to pay the costs, 12s. 6d.

WILLIAM KIRTLAND, of 66, Andover-road, Hornsey-road, was summoned for selling skimmed milk adulterated with 13 per cent. of added water. The summons was adjourned.

DRUG ADULTERATIONS.

On March 25, before Mr. Bros, at the Clerkenwell Police-court, John C. Meacher, chemist, of 61, Stroud Green-road, was summoned by the Islington Vestry for selling iodine, iodide of potassium, and water which was not composed of ingredients in accordance with the demand of the purchaser—to wit, 66 grains of iodine, 99 grains of iodide of potassium, and 3 ozs. of water, the said compound drug showing a deficiency of 14·8 per cent. of the required iodine and an excess of 9·3 per cent. of iodide of potassium. Mr. Bramall, solicitor, who prosecuted, said the summons was taken out under section 7 of the Food and Drugs Act, which stated "that any person who sells a drug which is composed of ingredients not in accordance with the demands of the purchaser is liable to a penalty of £20." In this case the Vestry did not suggest fraud, but carelessness. The usefulness of a drug is destroyed if the prescriptions are not properly dispensed. Inspector Ward proved taking a prescription to the defendant on February 21, and calling on the following day, when the drug was handed to him. He paid 1s., and then told the defendant that he purchased it for the purpose of analysis, and offered to divide it into three parts. He so divided it, and left one part with the defendant, one he sent to the Public Analyst, and the other he produced in Court. Defendant disputed the correctness of the analyst's certificate. He dispensed the prescription himself, and very carefully weighed the ingredients. He only bought the best drugs.—Mr. Bros adjourned the summons for three weeks, in order that a sample of the drug might be sent to Somerset House for analysis.

At Malling, on March 23, Thomas Day, a grocer, of Wrotham, was summoned for selling an adulterated drug.—Superintendent Lane stated that on February 15 he went to the defendant's shop and called for four ounces of nitrous ether. He was served with the article and paid 1s. 4d. for it. He then told defendant that the sample would be tested by the County Analyst. The Superintendent read the certificate he had received from the analyst, which stated that the spirit was adulterated, it being deficient of its active principle, viz., nitrous ether as required by the British Pharmacopœia, to the extent of 75 per cent.—In reply to Mr. A. J. Ellis, who defended, Superintendent Lane said he did not call for sweet spirits of nitre. Nitrous ether was a very volatile spirit.—

Mr. A. J. Ellis, for the defence, said the offence was only a technical one. Including the four ounces sold to the Superintendent, the defendant had only got rid of six ounces of the spirit in question since he had carried on his shop. He pointed out that the article was an extremely volatile one, and that its strength would be greatly reduced by opening the bottle. Mr. Ellis then contended that as the summons was not served within 28 days from the commission of the offence the case must be dismissed.—The Bench dismissed the case, the Chairman saying that a useful purpose had been served by the summoning of defendant.—Mr. Bligh added that it would, perhaps, have been much better if the Superintendent had been in uniform when he entered the shop to make the purchase.

WALTER COLEMAN, also a grocer, of Wrotham, was summoned for selling adulterated beeswax.—P.C. Broad deposed to purchasing at defendant's shop four ounces of beeswax, for which he paid 5d., and Superintendent Lane put in the certificate of the county analyst, which stated that the article consisted of 14 parts of beeswax, 45 parts of resin, and 40 parts of paraffin.—Defendant's defence was that he did not sell the article as pure beeswax. He sold it to persons for polishing floors or for laundry purposes.—The Bench regarded the offence as a technical one and ordered defendant to pay the costs only, 6s. 6d.

ADULTERATED CREAM OF TARTAR.

A CASE of some interest was tried lately in County Down. Sir Charles Cameron certified that a specimen of cream of tartar was adulterated because it contained 18·92 per cent. of tartrate of calcium. For the defence, Mr. Templeton alleged that he found only 15 per cent. of calcium tartrate in the duplicate sample, and that the British Pharmacopœia allowed that percentage. The case was dismissed. Sir C. Cameron, commenting on the case in the *Northern Whig*, said that the British Pharmacopœia made no allowance such as suggested by Mr. Templeton, and that commercial cream of tartar rarely contained over 12 per cent. of calcium tartrate. In reply, Mr. Templeton explained his evidence by showing that the test of purity given in the British Pharmacopœia implied the presence of calcium tartrate, and he quoted Mr. A. H. Allen, of Sheffield, in support of his statement. Mr. Allen, however, repudiated Mr. Templeton's statement, and held that over 15 per cent. of calcium tartrate was an adulteration.

ADULTERATION OF CODEIN.

ETIEVAUT (*Annales de Pharm.* '95) reports finding a sample of codein adulterated with cane sugar, which he detected by means of Fehling's solution after inversion.

CAMBERWELL ACTIVE.

LAST week Meinolf Springer, of Crown-street, was, at the instance of Inspector Kerslake, fined 40s. and costs for selling coffee containing 75 per cent. of chicory.

J. Hamilton, of Avenue-road, was summoned by the same inspector for exposing margarine for sale without having the parcel properly labelled, and was fined 20s. and costs.

Arthur Underwood, of Blake's-road, was summoned for exposing margarine for sale without a label. He was also summoned for selling coffee containing 70 per cent. of chicory.—Mr. C. Hubbard defended.—The summons as to the coffee was taken first.—Miss Stevenson, who made the purchase, denied, in cross-examination by Mr. Hubbard, that the defendant told her it was a mixture of coffee and chicory. She denied also that it was served in a printed wrapper.—The defendant went into the box, and said the witness asked for a quarter of shilling coffee, and was served in a printed wrapper. She told him what it was for, and he then told her it was a mixture of coffee and chicory. Mr. Denman said he had no hesitation in saying that he totally disbelieved Underwood's account of the matter. It was not a case in which he should mitigate the penalty in any degree. The defendant would be fined £10 and costs. On the summons for exposing margarine for sale without a label, the defendant was fined 20s. and costs.

E. J. Harris, of Castlemain-road, was fined 40s. and costs for selling coffee containing 65 per cent. of chicory.

Frances L. Marshall, of St. George's-road, was summoned by Inspector Heath for selling butter containing 50 per cent. of margarine. There was a second summons against the defendant for selling coffee containing 70 per cent. of chicory. The defendant was fined 40s. and costs on each summons.

Albert Baker, of Howbury-road, Nunhead, was at the instance of Inspector Pointon fined 20s. and costs, for selling margarine as butter.

W. H. Thompson, of the Prince Albert, Albert-road, was summoned by the same inspector for selling whisky 26·6 degrees under proof—being 1·6 degrees below the legal standard. The defendant, who attributed the decrease in strength to loss by evaporation, was fined 40s. and costs.

Joseph Lewis, a wholesale milk contractor, of Easton-street, King's Cross-road, was summoned by Inspector Groom for selling milk which was in course of delivery to the purchaser, from which 13 per cent. of the original fat had been abstracted, so as to injuriously affect its nature, quality or substance, without making

disclosure of such alteration to the purchaser. Inspector Groom deposed to testing a sample of the milk when it was about to be delivered to one of the defendant's customers at Camberwell. In cross-examination by Mr. Ricketts, who defended, the inspector said the summons was not taken out by himself, but by a gentleman from the vestry clerk's department. Mr. Ricketts contended that under Jarvis's Act it was not competent for any person not being a solicitor or counsel to take out a summons on behalf of another. Mr. Marsden called Mr. Toms, first clerk in the vestry clerk's office, who said he was authorised by the vestry to issue all summonses. There was no application to the magistrate, but application was made in the clerk's office. Mr. Ricketts submitted that that made the summons doubly bad. Mr. Denman remarked that there were decisions which required strict regularity in the early stages of proceedings under these Acts. This summons appeared to be irregular on various grounds. If it was not irregular by reason of the information being laid by the wrong person, it was certainly irregular through being issued without any application to the court. Mr. Marsden said he would at once make a formal application for a second summons. Mr. Denman said he should dismiss this summons, and take time to consider whether he should grant a second one.

MARGARINE.

At Salford, before Mr. J. Makinson, Messrs. Rafferty Brothers, wholesale provision dealers, carrying on business at No. 4, Liverpool-road, Manchester, were fined £10 and costs for selling margarine wholesale without having the same labelled or branded with the word "Margarine," in accordance with the provisions of the Margarine Act, 1887. The case was proved by Inspector Marriott, of the Health Department of the Salford Corporation, who said that the margarine had been sold to the retail dealer as butter.

At Leeds, on March 20, Howard Green, trading as the Colonial Trading Company, was charged with having exposed for sale margarine without attaching thereto the necessary label. Mr. Walker, the Corporation's inspector, proved the case, and a fine of £1 was imposed. Mr. Joliffe, deputy town clerk, prosecuted.

SALT IN BEER.

At Teddington, Charles Hucker, of the Royal Oak, Teddington, licensed victualler, was summoned at the Teddington Sessions, on Monday, for selling adulterated beer, containing salt to the extent of 72 grains per gallon—genuine beer only containing 30 to 60 grains per gallon.—Defendant did not appear, and after a statement by Inspector Tyler, in the employ of the Middlesex County Council, the case was adjourned for a week.

POISONED WHEAT.

At Beccles, on March 27, Samuel Bullen, of Geldeston, was summoned by Superintendent E. C. Shipp for selling poisoned wheat at Beccles on March 6. James Phillippo, a police-constable, deposed to buying a packet of poisoned wheat from the defendant Samuel Bullen. The wheat witness handed over to Superintendent E. C. Shipp, of Lowestoft. From the packet the superintendent took 30 grains, or kernels. The remainder was sent to Mr. James Napier, of Ipswich, the county analyst. The analysis showed that the wheat contained strychnine. Four previous convictions were proved, and defendant was fined £5, and £2 3s. 8d. costs. Fourteen days allowed for payment. Proceedings were taken in consequence of complaints made from Carlton Colville, Lowestoft, and the neighbourhood of Beccles, all agreeing that the poison was purchased at Beccles.

SPIRIT ADULTERATION.

At Matlock, on March 25th, John Monk, of the Three Stags Inn, Darley Bridge, was charged with selling half-a-pint of rum which was not of the nature and substance demanded. Mr. Clifford, of Derby, appeared on behalf of Captain Sandys, one of the county inspectors, to prosecute. It appeared there were 62 parts of rum and 31 parts of water, and the alcoholic strength was 48.5 under proof. The defendant said the strength had evaporated through being nine weeks in the cask. The County Analyst said it was impossible for this deterioration to come about in this manner. A fine of £5 and costs was imposed.—James Gyte, of the Boat House Hotel, Matlock Bridge, was charged with selling half-a-pint of whisky not of the proper strength. In this case it was shown that there were 78 parts of whisky and 22 parts of water. Mr. Neale, of Sheffield, defended, and said the wife had made a mistake in mixing the spirit. A fine of £4 and costs was imposed.

THE DANISH BUTTER SWINDLE.

At Matlock, on March 25th, Alfred Radford, grocer, Lea, was fined the nominal penalty of 2s. 6d. and costs for selling Danish butter which contained 60 per cent. of fat foreign to butter. The Bench believed the defendant was ignorant of the nature of what he was selling.

VINEGAR.

At Matlock, on March 25th, George Henry Watts, grocer, Matlock, was charged with selling vinegar which did not consist of malt vinegar, but was a dilution of acetic acid, coloured and flavoured. Mr. Neale was for the defence, and Mr. Clifford for the County Inspector. A question of fact arose as to whether malt vinegar was asked for, and the Bench said there was a doubt as to this, and they gave it to defendant, whereupon the case was not argued further.

ILLEGAL SALE OF POISON: A TENBURY PROSECUTION.

At the Tenbury Petty Sessions, on March 17, George Turley of Teme-street, Tenbury, was charged with having, on January 13 last, unlawfully sold a quantity of strychnine, value 1s., to Francis Edwards, he not being a registered chemist under the Pharmacy Act; and further with keeping open a shop for the sale of poisons without being registered. Francis Edwards, farmer, of Burford, said he called at the shop and asked for sixpennyworth of strychnine. Defendant said, "Make it a bob," and supplied him with the bottle, produced, for which he paid him 1s. Defendant then said, "Do not say that I sold it." There was no label on the bottle. Witness gave it to Mr. Hardeman, of the Swan Hotel, the same day. H. Hardeman, of the Swan Hotel, Tenbury, said the last witness handed him the bottle, which he handed to Sir William Curtis the same day. Sir W. M. Curtis, Bart., Caynham Court, Master of the Ludlow Foxhounds, said he received the bottle, and subsequently handed it to Sergeant Hardwick. There had been complaints of poison being laid in the neighbourhood. One hound was found poisoned in November, and several foxes have been found poisoned. Sergeant Hardwick, Tenbury, said he visited defendant's shop accompanied by Superintendent Long, who asked him to produce his poison book. He said, "I have not got one." Mr. Long remarked that defendant sold some to a gentleman a few days ago, and he replied, "Oh, he says I sold it, does he?" Raymond Ross, analyst, Worcester, deposed that the bottle contained 200 grains of strychnine—sufficient to poison a number of men. Superintendent Long corroborated Sergeant Hardwick, and stated that Mr. Turley, sen., defendant's father, died August 15 last year. He formerly kept the shop. Witness produced the register of chemists and druggists, also the register of qualified medical practitioners, and defendant's name did not appear in either. Defendant, who characterised the prosecution as "mean to a degree," was fined £3 10s. including costs, on the first summons, the second being withdrawn.

UN SOUND FISH.

At Derby on March 26, Abraham Calvert, fishmonger, of Midland-road, was summoned for having in his possession on the 6th ult. 36 codfish which were unfit for food. The Town Clerk prosecuted, and stated that the fish were seized by the sanitary inspector and taken before Mr. W. Hall, J.P., who ordered that they should be destroyed. Thomas Turner, assistant inspector of nuisances, stated that the fish were in a decomposed state. They weighed 482lb., were soft and flabby, and smelt very strongly, being quite unfit for human food. When the defendant's attention was called to the fish he said they were the leavings of the previous day's sale, but he thought they were quite fit to eat. Dr. William Iliffe said that the fish were in a decomposed state, and quite unfit for food. The defendant now said that the fish were not fit for sale. He was ill in bed at the time of the seizure. A number of witnesses were called for the defence, and after a very lengthy hearing the magistrates decided to fine the defendant 1s. for each box and costs.

UN SOUND RABBITS.

At the Stipendiary's Court, Stoke, on March 27, Frederick Jones, fruiterer and game and poultry dealer, of Liverpool-road, Stoke, was charged with having exposed for sale in the public market thirty-eight rabbits which were unfit for human food. The Town Clerk (Mr. J. B. Ashwell) prosecuted, and Mr. W. F. Holton defended.—On the night of the 15th ult. the market inspector saw a youth named Hill in charge of a stall in the market occupied by the defendant. Upon it were a number of rabbits which were exposed for sale. He found thirty-eight of these unfit for food, and the lad told him they belonged to the defendant. The inspector sent for the medical officer (Dr. S. Johnson), who condemned the rabbits. The defendant told the inspector that the rabbits were delivered to him by train, and he did not see them before they were put on the stall.—In reply to Mr. Holton, Dr. Johnson said the unwholesome condition of the rabbits was due to close packing in a hamper.—It was shown that the defendant was a respectable tradesman, and that the rabbits had only just been unpacked when the inspector came.—The Stipendiary said he would deal leniently with the defendant, as he was not one of those men who were engaged in palming bad meat on the public. He fined the defendant £1 for each rabbit—£38—and £2 7s. 6d. costs.

CORRESPONDENCE.

SODA WATER WITHOUT SODA.

To the Editor of FOOD AND SANITATION.

SIR,—I recently had several samples of soda water analysed, and many of them contained no soda. Don't you think the public are prejudiced by such articles? Shall be obliged by your opinion being given in your most valuable paper.—Yours truly,

INSPECTOR.

There have been prosecutions for soda water devoid of soda. At the West London Police-court, on March 23, 1893, summonses were heard under the Food and Drugs Act with respect to the sale of soda water which was not of the nature and substance demanded. These were the first of the kind in this district, and were regarded as test cases. In the case of Mr. Turnham, of the Station Hotel, Churchfield-road, Acton, it was stated that the soda water sold to the inspector was simply carbonated water, containing no bi-carbonate of soda. Mr. Cornwall, who defended, said soda water was manufactured in various ways, there not being any law regulating it. He gave a description of the way in which the soda water was manufactured and sold to the defendant. He said that there was a preparation of gas from bi-carbonate of soda, which was injected into the water, and with the escape of the gas on the cork being withdrawn there would be an escape of bi-carbonate of soda. He submitted that it fully answered the description of soda water. Mr. Curtis-Bennett gave a decision against the defendant, observing that it could not be soda-water, inasmuch as there was no soda in it. The thing ought to be sold under the name of carbonated water. He imposed a penalty of 10s., with 12s. 6d. costs.

Mr. John Ford, of Ye Hostelry, Turnham Green, who is also landlord of the Roebuck, High-road, Chiswick, appeared to answer two summonses for soda water sold to the inspector at each house. The article sold being of the same description, a penalty of 10s., with 12s. 6d. costs, was imposed in each case.

NUTROA FOOD.

To the Editor of FOOD AND SANITATION.

SIR,—In reply to Dr. Halliburton's letter in a recent issue, will you kindly permit us to say that the pamphlet advertisement referred to was based on a Report received by us from Mr. William Jago, F.I.C., F.C.S., whose high and honourable reputation as a chemist and specialist in the department of food products amply justified us in using his report without question. We may mention, however, that we have already had some correspondence with Dr. Halliburton on this subject; and that, although we considered, and still consider, that the quotation of that gentleman as authority was perfectly legitimate, yet we told him that we would remove his name from all future reports, and would, if he wished, make no further use of those already in print. Our sole reason for doing this was that we had no desire to do anything which should be objectionable to Dr. Halliburton; and further we expressed regret for any annoyance we had unintentionally caused him. We venture to submit that in so doing we have done all that can reasonably be expected of us. We would ask the members of the Medical Profession to whom this dispute is of any interest to apply to us direct for a copy of Mr Jago's report, and to judge for themselves whether we have in the slightest degree misrepresented the properties and character of Nutroa Food. So far as Dr. Halliburton's opinion that Nutroa Food is not a substitute for human milk is concerned, we may perhaps be permitted to add that that gentleman is in a very small minority, as we have abundant evidence of the marked success attending the use of Nutroa when properly prepared according to directions as a food for young infants.—We are, sir, yours very truly,

NUTROA, LTD.

54, Chiswell-street, E.C.

THE COMPARATIVE NUTRIENT VALUE OF MEAT PREPARATIONS.

To the Editor of FOOD AND SANITATION.

SIR,—Surely you must be joking, as otherwise I cannot think that you are downright in earnest in taking me to be a "humourist of the first water," or in accusing me of "poking fun" at the *Lancet*, because you have discovered a mare's nest in my letter to that journal of March 14 on the above subject. From your criticism thereof I am inclined to think that instead of me having arrived at a *reductio ad absurdum* in it you have come to a "curious conclusion" with regard to it which is delightful, and which puts in the shade completely the delightful and curious conclusion which I did not come to. As I understand your remarks I gather that you try to make out that in one part of my communication I admitted that Bovril is 16381 times more valuable, as a nutrient, than Valentine's Meat Juice, and that I afterwards rounded upon that statement by declaring my opinion that the former preparation was not comparable to the latter. Such

a somersault I have not indulged in, as you must see if you pay a little more attention to the wording of my letter to the *Lancet*, which is that "its (Valentine's) value as a nutrient . . . must have been estimated by your contemporary at sixteen and a-half times . . . less than that of Bovril." Here I did not commit myself to anything one way or the other. I merely referred to your calculations, which I consider I plainly indicated. I in no wise accepted as proving the superiority of Bovril over Valentine's Meat Juice, considering my reference to what the *Lancet* pointed out—viz., your omission to quote the last sentence of Professor Chittenden's report of his analyses, and which defined the scope of his investigations "as limited, or as only giving the total proteid matter contained as compared with the amount in fresh, lean beef," without entering into the considerations of extractives and other stimulating constituents. Thus, I hope I have made my meaning clear that it is owing to the want of completeness of your analysis, together with your failure to substantiate your assertions by refusing to accept the challenge of the *Lancet* for an independent inquiry into the matter, that I have arrived at "a curious conclusion," to "revert to my old opinion, which I intend to hold until it is proved to me to be wrong by an unquestionable authority, viz., that Bovril is not comparable with Valentine's Meat Juice;" and not because I do not realise that Bovril is, according to FOOD AND SANITATION's reckoning, and not according to my calculations, seventeen times more valuable than Valentine's Meat Juice.

With regard to your saying that I appeared to think there is some wonderful virtue in the words, "compared with the amount in fresh, lean beef," I really must request you to favour me with your reasons for coming to such "a curious conclusion," as I am sure they must be delightful, seeing that I do not appear to have thought much at all about the phrase, as I have only quoted it once in my letter, and then only in a borrowed sentence of Professor Chittenden's.—I remain, sir, yours faithfully,

Llansilin, March 25, 1896.

R. HILL SHAW, M.B.

TODMORDEN SEWERAGE.

A LOCAL Government Board Inquiry was held on the 19th inst. by Mr. Rienzi Walton, C.E., into an application of the Todmorden Urban District Council to borrow £40,000 for sewerage and sewage purification purposes.

Evidence in support of the application was given by Mr. Shaw, surveyor, Dr. Thorp, medical officer, and Mr. A. Crossley, chairman of the sewerage committee.

Mr. Sutcliffe, the clerk to the council, stated that the sewage would be treated by the International system, precipitation by Ferozone and filtration through Polarite.

There was no opposition.

FOOD PRESERVATIVES.

By R. T. THOMSON, F.I.C.

THE term "preservative," as applied in connection with foods, is somewhat of a euphemism, as it lays the whole stress on the fact that it preserves food from putrefaction, or at least delays the chemical decomposition of the organic substances of which food is composed, such as the casein and sugar of milk, the fibrin and other albuminoids of meat, the fat of butter or margarine, and the glucose and maltose of wines and beer. Taking this broadly as the meaning of the term "preservative," it can scarcely be distinguished from the term "antiseptic," which of course means any substance which prevents putrefaction. But in order to make some distinction, real or imaginary, between these, the word "preservative" has generally been restricted to chemicals which prevent or delay putrefaction or other changes in chemical composition, but which at the same time are supposed not to have any harmful action on the animal organism when taken internally with the food with which it is mixed. That this is so has in every case been a mere assumption, and these substances have been introduced for the purpose of preserving food with that view alone, and not because they have in addition been proved to be innocuous. Of course, distinctions of a kind have been drawn, and probably no one has attempted to use articles as preservatives which have had an objectionable smell, or which have been of a distinctly poisonous nature, such, for instance, as carbolic acid and mercuric chloride or corrosive sublimate. The fact, however, remains that preservatives have been added to foods without anything having been done to prove their harmlessness, and

certain chemicals are still largely employed, even after good reasons have been given for discontinuing their use.

In dealing with the subject of food preservatives there are two main questions to consider, namely, the relative power of the preservatives as regards different articles of food, and the action, so far as is known, of those preservatives on the human organism. As regards the former part of our subject, I have carried out experiments, the results of which will show the power of the preservatives selected for consideration, but for the second part I have had to rely on recorded results, as this is more a study for medical experts. The preservatives which were experimented upon were carbonate of soda, borax, boric or boracic acid, fluoride of sodium, benzoic acid, benzoate of soda, salicylic acid, salicylate of soda, peroxide of hydrogen, and formic aldehyde, these being conventionally regarded as food preservatives of at least a less harmful character. In addition to these, three antiseptics pure and simple, namely, carbolic acid, cresylic acid, and mercuric chloride were tested as regards their preservative power, and all of the results are recorded in the following tables:—

Table I.

Results of first series of trials with milk, showing the preserving power of certain antiseptics.

Preservatives employed in grains, per gallon of milk.	Number of days before milk became distinctly sour.	Lactic acid in milk p.c. in 8 days.	Lactic acid per cent. in 11 days.
Pure milk - - - -	4	0·68	0·71
Boric acid, 35 grains - -	6	·42	·52
Boric acid, 17½ grains + borax, 27 gr. - - -	9	·10	·32
Salicylic acid, 17½ gr. -	7	·26	·42
Salicylic acid, 35 gr. -	9	·11	·33
Benzoic acid, 17½ gr. -	6	·45	·52
Formic aldehyde, 8½ gr. -	9	·12	·43
Formic aldehyde, 17½ gr. -	not done	·10	·14
Formic aldehyde, 35 gr. -	„	·07	·10

Note.—The formic aldehyde used in these trials was the well-known 40 per cent. strength. The mixture of boric acid and borax employed was equal to 35 grains of crystallised boric acid per gallon of the milk.

Table II.

Results of second series of trials with milk, showing the preserving power of certain antiseptics.

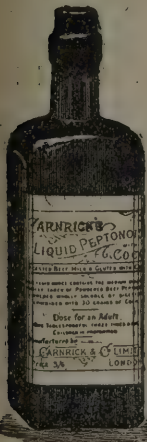
Preservative employed per gallon.	No. of days for milk to sour.	Lactic acid in milk, per cent., in		
		7 days	10 days	21 days
Pure milk - - -	3	0·54	0·72	—
Carbonate of soda, 35 gr.	4	·45	·67	—
Carbolic acid „	5	·34	·56	—
Cresylic acid „	5	·33	·56	—
Fluoride of sodium „	5	·31	·52	—
Borax „	5	·31	·54	—
Boric acid „	6	·23	·45	—
Benzoic acid „	6	·24	·45	—
Benzoate of soda „	6	·23	·45	—
Salicylic acid „	7	·18	·36	—
Salicylate of soda „	7	·18	·36	—
Mercuric chloride „	—	not done	·05	·05
Formic aldehyde (40 per cent.), 35 gr. - - -	—	„	·05	·05
Peroxide of hydrogen, 70 gr. - - -	—	„	·05	·05

Table III.

Results of series of trials with glucose solution, showing the preserving power of certain antiseptics from fermentation by yeast.

Preservative employed, per gallon of glucose solution of sp. gr. 1·016·0.	Percentage of the glucose fermented in 12 days.	Percentage glucose fermented in 17 days.
Pure glucose solution - -	82	98
Carbonate of soda, 35 grains -	74	94
Carbolic acid „ -	62	81
Cresylic acid „ -	62	81
Fluoride of sodium „ -	0	0
Borax „ -	85	97
Boric acid „ -	80	96
Benzoic acid „ -	0	0
Benzoate of soda „ -	96	99
Salicylic acid „ -	0	0
Salicylate of soda „ -	97	99
Mercuric chloride „ -	0	0
Formic aldehyde „ -	70	91
Peroxide of hydrogen, 70 grs. -	0	0

(To be continued.)



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# Food & Sanitation

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# YORKSHIRE RELISH.

## CAUTION.

**WILLIAM POWELL** (Trading as Goodall, Backhouse & Co.)  
**v.**  
**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,  
 65 & 66, Chancery Lane, London,  
*Plaintiff's Solicitor.*

The following is extracted from "**THE ANALYST**" for March, 1893.

### "THE COMPOSITION OF MILK AND MILK PRODUCTS.

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## Food and Sanitation.

SATURDAY, APRIL 11TH, 1896.

### THE PROTECTION OF TRADE TITLES.

THE strongly-worded judgment delivered last week by Lords Justices Lindley, Kay, and Smith in the Yorkshire Relish case, whilst it was only what might have been expected, came as a relief to many traders who scarcely realised how seriously imperilled would be a large number of businesses had the decision been against Messrs. Goodall Backhouse's exclusive right to the use of the words "Yorkshire Relish." Many thousands of pounds have been spent, and much skill and energy devoted to pushing the sale of a host of articles such as Sunlight Soap, Vinolia Soap, Bovril, Mazawattee Tea, etc. It would be an intolerable wrong were the law to sanction the right of any soap maker to call his article, for example, Sunlight Soap, and sell it to the public as such, and thus reap the reward of the vast expenditure, reputation, and business aptitude of

others. Yet this was virtually what the Court of Appeal was asked to sanction. Costly and lengthened as has been the litigation, the result is admirable in stating so clearly that the law will not sanction flagrant and unjustifiable violations of legitimate rights.

It is amazing that such a claim could be seriously urged, but in these days of keen competition some curious cases come into court. For instance, last week Mr. Justice Kekewich heard an application on the part of a Mr. Rosetree, of Canterbury, to expunge from the Register of Trade Marks "Bovril." His Lordship dismissed the application with costs. Traders will thus see how seriously their interests were menaced, and that they owe a debt of gratitude to Mr. Powell for having so sturdily fought, at enormous expense, the battle of protecting trade titles, for if Yorkshire Relish might be encroached on to-day, to-morrow would bring like attacks on scores of proprietary articles.

The fact that last week the courts had before them attempts on Bovril and Brookes' Soap shows the seriousness of the danger. The law is not too prone to fair play, and in these instances it is satisfactory to find it so honest and outspoken.

### THE SHEFFIELD MEDICAL OFFICER OF HEALTH.

THERE is no economy more disastrous for the public well-being than that of inadequately requiring the services of Medical Officers of Health and Sanitary Inspectors, for it causes the men who know all about the working of a town or city to become dissatisfied and transfer their skill and experience to places where they are more fairly recompensed. It is bad policy to make places into nursery grounds from which more appreciative towns draw officials of capacity and experience, and we are pleased to see the *Sheffield and Rotherham Independent*, of April 3, writing very sensibly and far-seeing on the refusal of the Sheffield City Council to increase the salary of its medical officer. Our contemporary says:—

"The refusal of the City Council to increase the salary of the Medical Officer of Health created at the time considerable feeling in the medical profession. It was held that the stipend attached to the office was inadequate for such a post in so important a city as Sheffield, and regret was felt that the valuable services which Dr. Littlejohn had rendered to the city should be so ill requited. Steps were immediately taken by the most prominent members of the profession to testify in some practical way the regard with which the medical profession look upon the excellent work which Dr. Littlejohn has done in Sheffield as Medical Officer of Health, and the cordial relations which have subsisted between them since he has held that office. This culminated in a memorial to which the signatures of more than a hundred local practitioners were appended—in fact all of those whose names were solicited. Dr. Littlejohn was entertained at dinner at the Victoria Hotel yesterday, when many of the signatories to the memorial were present.

The graceful tribute of appreciation and professional courtesy which the medical practitioners of Sheffield last night paid Dr. Harvey Littlejohn must have been highly gratifying to that gentleman himself, but it is none the less satisfactory to the city that such cordial friendship should exist between the Medical Officer of Health and the medical profession generally. No better guarantee for the proper care of the health of the city could be devised than a bond of sympathy which ensures to the guardian of the public health all the assistance that his local *confrères* can render him. Such a memorial as that presented to Dr. Littlejohn at the dinner last night is an absolutely incontrovertible and unquestionable record of his ability for the office which he holds, and of his zeal in the performance of his duties. Its presentation, therefore, is a matter of



public importance, apart from its professional and personal significance.

Dr. Favell, in a letter apologising for his absence from last night's function, remarked that a first-rate medical officer of health is a great power for good in a community such as ours, and an incompetent one is an equally great power for evil. This undeniable statement, together with the fact that the presentation and dinner amounted practically to a protest against the refusal of the City Council to increase Dr. Littlejohn's salary, reminds us that the question of the remuneration of the medical officer of health is one that must come up again sooner or later. There can be no doubt that the class of work which falls to the lot of such an official is of such a peculiar character, demanding so much special experience, that if the citizens of any town wish to retain for long the services of a good man for the post, they must make up their minds to pay a good salary. It is unnecessary at this moment to discuss the point any further, but it is idle, however much we may desire economy, to burke patent facts."

We hope Sheffield will soon show a more just appreciation of Dr. Littlejohn's services.

#### IMPORTANT LARD PROSECUTION.

At the Bristol Police-court, on March 31, before Mr. Chas. Townsend and Mr. J. W. Arrowsmith, there were charges heard against certain tradesmen of Bristol under the Food and Drugs Act. The defendants were Messrs. G. Scudamore, T. Snow, F. Northam, W. Ring and W. Hall, grocers. For the four first named Mr. Holman Gregory (solicitor to the Bristol and District Grocers' and Provision Dealers' Association) appeared, Mr. H. G. Doggett appeared for Mr. Hall, and Mr. Robinson (Wansbrough and Robinson) watched the cases on behalf of Messrs. Topping and Co., Belfast.

Mr. George Scudamore was charged with having on the 2nd of March sold one pound of lard which was not lard, but a mixture containing a per centage of foreign ingredients, viz., 15 per cent. of beef stearine.

Mr. Holman Gregory stated that the defendant pleaded not guilty.

Inspector William Beer said on the afternoon of the day in question he visited the shop of the defendant in Old Market-street. He purchased one pound of lard of the Snowdrop brand, and paid 4½d. for it. Mr. Scudamore, junr., served him, and witness said he was inspector under the Food and Drugs Act, and intended to have the lard analysed. He submitted one portion to Mr. F. W. Stoddart, the city analyst, whose certificate stated that the lard was adulterated with 15 per cent. of beef stearine.

In cross-examination by Mr. Gregory, the witness said that he had received notice from the defendant and others claiming exemption on the ground of a warranty under section 25 of the Act. He knew that Mr. Scudamore was a grocer in a large way of business, over thirty years, and during that time, except in one other case of lard, he had never been summoned for any offence. The lard now supplied was served to him in a packet taken from the shop window.

Mr. Gregory, addressing the bench, said he did not want to ride off on a side issue, but the public should know under what circumstances the grocers of the city were summoned there that day, and he took exception to the certificate of the analyst for two reasons. In the first place Mr. Stoddart had not set out the component parts of the article that he had before him, which was necessary under the Act, and in addition lard was a substance which decomposed somewhat quickly, and it was necessary for the analyst to state at the bottom of his certificate that the sample sent to him was in a proper and perfect state for analysis. There was nothing in the case to hide, and the defendant wanted all the facts brought before their worships. Much discussion had arisen during the past

few years as to what was pure and what was adulterated lard, and it had been held pretty effectually that the lard must be of the pure fat of the pig, free from beef stearine or any other article which some manufacturers introduced for stiffening. In consequence of the cases which had come before magistrates, most of the leading grocers were very particular when they purchased lard from the wholesale dealer. It became necessary that they should get a guarantee before they contracted a purchase. In the present case their worships would be surprised to hear that the lard was purchased from Messrs. Topping and Co., of Belfast, as absolutely pure, and from the wrapper they would see that these manufacturers sent it away describing it as pure lard, and guaranteeing it free from adulteration. Bristol shopkeepers, in buying that lard, had it from a large and respectable firm in Bristol, Messrs. H. H. and S. Budgett and Co., who, no doubt in their turn, bought under a written guarantee that the lard was pure, and the trouble arose from Messrs. Topping sending out lard which was not equal to their description. He referred to section 25 of the Act, and maintained that it had been complied with by the defendant, and he claimed exemption under that section. There was not the slightest stain on Mr. Scudamore's character, and he for 35 years had been in business, and it was particularly hard that after that time, with all the precautions he had taken he should be thus deceived by the person he purchased of, and put to that expense, annoyance, and trouble, as well as incurring the publicity in a matter which he could not control.

Mr. Scudamore was then called by Mr. Gregory, who proposed to examine him.

The Clerk (Mr. Braithwaite) said they had better settle the two points raised by Mr. Gregory first.

Mr. Gregory said he hoped that independent of those points they would allow him to examine the defendant, as it was a serious case.

Mr. Townsend asked if Mr. Stoddart, the analyst, would be able to say there was beef stearine if the lard was decomposed.

The Clerk said the lard was made with the intention that it should keep: was that not so?

Mr. Scudamore: Yes.

The defendant was then examined by Mr. Gregory. He said that he purchased of Messrs. Budgett one case of lard, and desired that it should be guaranteed in writing. That was on the 25th of February. The case contained one pound packages, and it was labelled "Pure lard, guaranteed free from adulteration," on the wrapper. He received with the lard an invoice from Messrs. Budgett, and on the invoice was "Guaranteed pure," when he had it. He sold the lard in exactly the same state that he received it, and he believed it to be pure unadulterated lard.

Mr. Gregory quoted the decision in the case of Lindsey and Rook, where the word "unadulterated" on a cask of vinegar was held to be a sufficient warranty, and asked the bench on that decision to dismiss the present case.

Mr. Townsend said the magistrates found that the analyst's certificate complied with the Act of Parliament, that the lard was adulterated, that the defendant bought the lard with a written warranty which complied with section 25 and sold it in the same state; and therefore the case would be dismissed. The magistrate added, "I hope this won't be the end of it."

Mr. Robinson said, on behalf of Mr. Topping, he disputed the accuracy of the analyst's certificate.

Mr. Gregory: We will give him an opportunity of testing it. He added that the other cases in which he appeared for defendants were of a similar character to that one, except that there was a charge against Mr. Thomas Snow which differed a little.

The case of that defendant was then taken.

Inspector Beer was sworn, and he said that on March 2 he went with P.C. Bennett to the shop of Mr. Snow, in Old Market-street, and there purchased two



samples of lard—one in a packet and the other American tub lard. He paid for the samples 6d. and 4½d. per pound. The label which was on the lard was similar to that in the other case. The defendant was present himself in the shop. He had known Mr. Snow for 25 years, and had never known him to have been summoned. Mr. W. Ring and Mr. Frank Northam were also summoned, and neither of them had ever been summoned before. Their cases were similar to the others.

The Clerk interposed, and said unless the police withdrew the cases they could not economise labour by taking the charges in that way.

Inspector Beer said the charge against Mr. W. Hall was of a similar character.

Mr. Gregory addressed the magistrates on behalf of Mr. Snow, and said he had been in business about 40 years, and with the multitude of articles he had to buy, and the liabilities to purchase some of them adulterated, it was a very valuable certificate of a man's character and of the way in which he conducted his business that he had been so careful as never to be summoned; he had never knowingly purchased what was adulterated. There was this exception in the case. Mr. Snow had purchased the lard from Mr. Lewis Thomas, and it was invoiced, "Snowdrop, two boxes pure lard." He contended that this was a warranty within the Act, although the word "warranty" was not used. The case of *Lindsey v. Rook* governed it, and he asked that the charge should be dismissed.

Mr. Snow was put into the witness-box, and he said that he bought the lard from Mr. Thomas with a written warranty.

Mr. Townsend remarked that this case was very similar to the other they had heard. They found under the certificate of the analyst that the lard was adulterated, and it was sold to the defendant with a written warranty. He sold it believing it to be the same article, and it was in the same state that he received it. The case was dismissed.

There was a charge against Mr. William Hall, and Mr. H. G. Doggett, who appeared for the defendant, asked if the Bench were going into this.

Supt. Wedmore stated that he had looked into the certificates, and the notice was given as to warranty, and he was satisfied.

Mr. Doggett asked his client if he was willing that the case should be withdrawn.

Mr. Hall replied in the affirmative.

Mr. Doggett, addressing the Bench, said that Messrs. Budgett, who sold the lard to Mr. Hall and many of the other defendants, fully recognised that pure lard was expected, and they sold with it a warranty that the lard was pure, and they themselves bought it of Messrs. Topping, of Belfast, with a written warranty that it was perfectly pure lard, and they paid the best price. All he could say was that he hoped some means might be taken to give Messrs. Topping the same kind of trouble which they had brought upon many tradesmen in that city, and upon one of the best firms of merchants.

Mr. Robinson: Mr. Topping is quite ready to meet the case.

Mr. Gregory: Mr. Topping has no right to speak here.

Mr. W. Ring and Mr. Frank Northam were then formally charged, and the cases against them dismissed.

#### "BOVRIL."

MR. JUSTICE KEKEWICH, sitting in the Chancery Division of the High Court of Justice on March 31, in *re* the Patents Designs and Trade Marks Acts, 1883 to 1888, and Trade Mark No. 58,405, heard an application by Mr. Bower on behalf of Mr. John Rosetree, trading as Rosetree and Co., 21, Bedford-road, Canterbury, for an order to rectify the register by expunging therefrom a mark consisting of the name "Bovril," which was

registered in November, 1886, as the property of Mr. J. L. Johnston, and by him assigned in April, 1889, to a company called "Bovril (Limited)," to whom it was registered under Clause 42 of the Act under substances used for food or ingredients for food. Without calling on counsel who appeared to oppose the application, his Lordship said the real question in the case was whether the word "Bovril" was non-descriptive. In his opinion it was not descriptive as applied to all, or to a large number, of the articles sold by the respondents, and consequently it must be allowed to remain on the register; and he dismissed the application with costs.

#### "YORKSHIRE RELISH" JUDGMENT.

ON March 31, judgment in the case of *Powell v. The Birmingham Vinegar Brewery Company (Limited)* was delivered by the Court of Appeal (present: Lords Justices Lindley, Kay, and Smith). Lord Justice Lindley said this was an appeal by the defendants from an injunction restraining them from selling sauce made by them under the name of "Yorkshire Relish" without better distinguishing it from a sauce of the same name which had been sold for many years by the plaintiff. The plaintiff did not complain of the infringement of any registered trade mark, but relied entirely upon the common law right to prevent other people from selling goods which could be passed off as and for goods made by him, and sold under the name of "Yorkshire Relish." The case was one of very great importance, not only to the parties concerned, but to traders and the public generally. He would first of all state what he conceived to be the law applicable to such cases generally. Before there was any legislation on the subject of trade marks, it was well settled that when anyone adopted a trade mark so closely resembling the trade mark of another as to be likely to be mistaken, an injunction would be granted. This was settled as long ago as 1833, when it was decided that "intention" and "deceit" were not essential to warrant the court in granting an injunction. The court would interfere to protect a plaintiff if ordinary or unwary purchasers were likely to be misled and mistake the goods of the defendant as for those of the plaintiff. Nothing could be more clear upon this point than the decision of the Lord Chancellor in the case of *The Singer Manufacturing Company v. Loog*. This point was also settled in 1824 in *Sykes v. Sykes*; and it had been recognised ever since. Persons might be misled, and might mistake one class of goods for another—although they did not know the name of either person. A person whose name was not known, but whose mark was imitated, was just as much injured in trade as if his name were known: his mark had given a reputation to his goods, and his trade depended on such reputation, the mark selling the goods. A rival who took the mark could hardly help deceiving others, and for such an injury redress could be obtained. The case of *Siebert v. Findlater* (the Angostura bitters case) was an illustration of this. A trade mark only conferred on the person who owned it the right to say, "Do not use a mark like mine, so that persons may be misled." A trade mark did not confer any exclusive right on a person to sell a particular kind of goods; it was only a protection against the possibility of a person mistaking the goods of one trader for those of another. The same principle was applicable to the use of certain words for the designation of particular goods, as was shown by a series of cases—the Glenfield starch case, the Angostura bitters case, the Stone ale case, the Excelsior white soft soap case, and others; but the exclusive right to the use of words was much more burdensome to other people than the exclusive right to the use of a mark. If a man used his own name to denote his particular goods, it would be intolerable to confer on him the right to prevent other people from using their own name, even although their goods might be the same as



his. If a person used words to describe the particular kind of goods, such as "leather" goods, it would not be right to prevent others from doing the same. The leading case upon the subject was that of *Reddaway v. Banham*. In that case the plaintiff had long made and sold camel-hair belting; the defendant had also sold the same—both being made of camel hair, and it was proved that in the trade "camel-hair belting" meant the camel-hair belting of the plaintiff's manufacture, and that the defendant's goods were being sold as and for the plaintiff's. The Court of Appeal held that the plaintiff was not entitled to an injunction, but the House of Lords had taken a different view. No case had yet decided that the name of an article, whether patented or not, could be used in such a manner as to enable the goods to be passed off for those of another person. If the name had become *publici juris* any person making the same article could call it by the name by which it was known, but the name could not become *publici juris* so long as the owner asserted his rights. Moreover, it was for those who asserted that the name was *publici juris* to prove it. A more difficult case arose where a man had for a long time been the sole maker of a particular article which he had always called by a particular name, and by which it had been called in the trade. A rival trader could not, of course, adopt the name so as to enable his goods to be passed off for those of another; but, if he could avoid doing this, there was no law to prevent him from making and selling the same goods as the other person, and calling them by the same name. If it was impossible to distinguish the goods, and to prevent the rival goods from being mistaken for the others, what was to be done? Was the name to be protected, or was the rival to be allowed to use it? It was clear that the presumption should be in favour of the old trader. Whatever doubt there might have been upon this matter had now been removed by the decision of the House of Lords in *Reddaway v. Banham*. The doctrine laid down in that case was, however, said to lead to this curious result—that an inventor of an unpatented article might enjoy a longer monopoly than the inventor of a patented article. But there was nothing anomalous in that. If a man had a secret invention by which he could make an article cheaper and better than other people, he had a right to do so so long as his secret was not discovered; but, when it was discovered, he was in the same position as a patentee whose patent had expired. His Lordship proceeded to deal with the facts of the case. For thirty-five years the plaintiff had made and sold a sauce which he termed "Yorkshire Relish." "Yorkshire Relish" was a non-descriptive trade name; and it was important to bear this in mind—that the composition and mode of making it were known only to the plaintiff. The sauce had been sold in ordinary round glass bottles, on which a blue and red label had been fastened. The name of the plaintiff was on the label, and the words "Yorkshire Relish" were also printed in a conspicuous manner upon it. The words "Yorkshire Relish" were also impressed upon the glass bottles, and the bottles were sold in wrappers made of white paper, on which "Yorkshire Relish" was printed in large letters. The plaintiff's trade was a very large one, and was stated to be very profitable—the sum of over £400,000 having been spent during the last thirty years in advertising. The plaintiff had more than one trade mark, namely, the label and a representation of a willow pattern plate. Some years ago the words "Yorkshire Relish" were registered as a trade mark; but, after long litigation with the present defendants, these words were expunged from the register, so that the words "Yorkshire Relish" were not, therefore, *per se* a registered trade mark, though they remained most conspicuous and important words upon the wrappers. The plaintiff had invariably taken proceedings to prevent other persons from using these words to denote any sauce made by them, and hitherto

he had always succeeded. The term "Yorkshire Relish" could not, therefore, be said to have become *publici juris* within the meaning of that expression as applied to a trade name. The evidence plainly showed the value to the plaintiff of the name, for it not only denoted a particular kind of sauce, but the sauce which the plaintiff had alone hitherto made. Persons in the trade, or who read what was on the label, knew that the sauce was made by the plaintiff. At the same time it was true that a great number of ordinary retail buyers were guided by the words "Yorkshire Relish," for such persons did not often attend to anything else upon the label. The evidence upon this point was very strong. What might happen if a retail trader sold it in bottles unlike the plaintiff's, or at a price so dissimilar as to attract attention, there was no evidence to show. Perhaps it would not be worth anybody's while to attempt to create a trade in Yorkshire Relish under such conditions. The defendants, having succeeded in removing from the register the words "Yorkshire Relish," had determined to try and make a sauce to be sold under that name. They had succeeded in making a sauce so like in smell and taste to the plaintiff's that it was difficult to distinguish the one from the other; but they had not discovered the plaintiff's secret, and the sauce sold by defendants was not the same as the plaintiff's, and was not in all respects like the plaintiff's. Defendants had taken care not to imitate the plaintiff's label, nor his trade mark of the willow pattern plate, but the words "Yorkshire Relish" were as conspicuous on defendant's bottles as upon plaintiff's, and the consequence was that, notwithstanding differences in the wrappers, the defendants' sauce could be, and, in fact, was easily mistaken by ordinary buyers for the plaintiff's. This fact was undeniable. It followed that the plaintiff was entitled to be protected. The case fell within the principles acted upon in the *Glenfield Starch* case, the *Excelsior White Soft Soap* case, *Seixo v. Prohedenda*, the *Angostura Bitters* case, and, lastly, the case of *Reddaway v. Banham*. The defendants stated that they did not wish to pass their goods off as the plaintiff's, but they did, in fact, cause them to be so passed off; and, although he had no doubt that the defendants did not want to transgress the law, yet they did want to trade on a reputation which did not belong to them—a reputation which had been earned by, and belonged to, the plaintiff. Mr. Justice Stirling had granted an injunction which was, in effect, an injunction not to restrain the defendants from selling their sauces as "Yorkshire Relish" without any qualification, but to restrain them from so doing without better distinguishing their sauce from that made and sold by the plaintiff. He was of opinion that the judgment appealed from was right, and that the appeal should be dismissed with costs. He did not shrink from the conclusion that the defendants might find it practically impossible to compete with the plaintiff in the trade. He did not see the injustice of such a conclusion, nor did he see that the public would greatly suffer by it. The defendants' sauce was not what had hitherto been known as "Yorkshire Relish"; the defendants could sell and make their sauce as much as they pleased, but they could not sell it under the name of "Yorkshire Relish." If they could do that without misleading customers the plaintiff might lose some of his trade; but if the defendants found it impossible to comply with such conditions in order to compete with the plaintiff they must drop the name altogether. Such a result had been pointed out by Lord Justice Bowen when the case was before the Court of Appeal before. The defendants had full warning of the difficulty in their way if they attempted to do what they had done. Lord Justice Kay said the law was this—that it was unlawful for a trader to pass off his goods as the goods of another, and even if done innocently this could be restrained, as was decided many years ago in the case of *Millington v. Fox*. His Lordship, having at some



length referred to the law bearing upon the case, said the importance of the plaintiff's trade might be gathered from the fact that he sold over 6,000,000 bottles of "Yorkshire Relish" every year. The resemblances and the differences between the two labels seemed to show plainly that the defendants tried to make such general similarity in the label as might lead an incautious person to think that the plaintiff had made a modification of his label. The defendants sold their sauce for a less price than the plaintiff, and it was proved that some grocers, at any rate, sold it for precisely the same sum as that which they got for the plaintiff's, so that there was direct inducement to buy the defendant's sauce, and to pass it off as the plaintiff's upon customers who asked, as usual, for "Yorkshire Relish." There was evidence that when retail traders were asked for "Yorkshire Relish," they supplied the defendant's sauce, and that *bonâ-fide* purchasers wanting the plaintiff's sauce had been deceived. Without this evidence he should have inferred that what the defendants were doing would be calculated to deceive. The words "Yorkshire Relish" were not descriptive in any sense at all; and, as the general rule of law that one person should not trade so as to pass off his goods as those of another, applied to the present case, he agreed with his brethren in thinking that the appeal should be dismissed with costs. Lord Justice Smith concurred. He said fair and honest competition was perfectly lawful; but when a trader took the name of an article which had been used by another he must be particularly careful how he acted. Appeal dismissed with costs.

Mr. Graham Hastings, Q.C., Mr. John Cutler, and Mr. T. A. C. Hampson (instructed by Mr. J. Seymour Salaman) appeared for the plaintiff; and Mr. Fletcher Moulton, Q.C., Mr. Buckley, Q.C., and Mr. Waggett (instructed by Messrs. Thorogood, Tabor and Hardcastle, agents for Messrs. Cooper and Co., Newcastle, Staffordshire) appeared for the defendant company.

#### BROOKE'S "MONKEY BRAND" SOAP.

ON Tuesday the action of Benjamin Brooke and Co. (Limited) v. Brooke's Soap Manufacturing Company and Ginner, Morton and Goddard, came before Mr. Justice Chitty, upon an application by the plaintiff to continue the interim injunction, granted the previous week, restraining the defendants from selling soap in packets without clearly distinguishing it from the plaintiffs'. Mr. Farwell, Q.C., and Mr. Walter appeared for the plaintiffs; Mr. Levett, Q.C., and Mr. Micklem for the defendants. Evidence was given by Mr. Fordham, Travers and Son, David Matthews, and Messrs. Pink that Hugh Brooke had recently called upon them, on his arrival from America, with a view of ascertaining whether they would act as agents for the sale of a scouring soap, but they declined owing to the similarity between the wrapper and the well-known "Monkey Brand" wrapper. From the affidavit of the defendant Brooke it appeared that he and his brother traded in Philadelphia as soap manufacturers, and that it was the practice to enclose scouring soaps in red wrappers. No proceedings had been taken in America against the defendant company, although the plaintiffs were aware of the sale of the soap. In February last the defendant company resolved to introduce their soap into the English market, and an attorney was consulted as to whether the wrapper in question could be used, the attorney giving it as his opinion that it could be. Brooke endeavoured to get the wholesale trade to take up the soap, but they declined, on account of the colour, whereupon witness agreed to alter it. None of the soap in the red wrappers had been sold. Mr. Farwell asked that the injunction should be continued until the trial or further order. His Lordship thought that if a person did not wish to commit a fraud (particularly where the name was the same), he should distinguish his goods from all others. A distinction could be made by using a different colour. No doubt there were certain

distinctions; for instance, in place of the monkey the defendants had a boy. Mr. Levett contended that the defendants had a perfect right to use their own name. His Lordship said it was not the function of the court to say what the distinction should be. Mr. Levett complained that the plaintiffs had come behind the defendants' back and obtained an *ex parte* injunction. His Lordship said it must not be forgotten that the defendant did not tell the plaintiffs that he was coming over with these goods. Mr. Levett pointed out that Mr. Fordham in his affidavit stated that he should not object to the sale of the soap provided the colour of the wrapper were altered, and this the defendants were willing to undertake to do. Mr. Farwell, in reply to his Lordship, said he should not now be satisfied with merely an alteration of colour. Mr. Levett argued that the defendants had no intention of selling the soap in the wrappers complained of, it being defendants' intention to reship the soap to America. Had this fact not been suppressed at the time the application was made to the Court his Lordship would not have granted an injunction. Mr. Micklem, on behalf of Messrs. Ginner, Morton, and Goddard, wholesale grocers, urged that no case had been made out against them as they had not offered the soap for sale or threatened to do so, and further, they declined to accept the agency unless the colour of the wrapper was changed. His Lordship, in delivering judgment, said the plaintiffs sought to restrain the defendants from selling soap in packets without clearly distinguishing it from the plaintiffs' soap. The plaintiffs' soap was not for washing clothes, but for cleaning brass and other substances of a similar nature. In February the defendant Brooke crossed the Atlantic, bringing with him a considerable quantity of soap, with a view of putting it on the English market, he being advised by an American lawyer that he could do so without infringing the English law on the subject. Having been so advised, he went about to several persons engaged in the trade selling soap of this description, and asked them to sell it for him—in fact, to become agents for him and his company, the company consisting of himself and another. He went to some persons in a large way of business, and they—not from a knowledge of law, but from a knowledge of what was required by common honesty—said they could not do it. He pressed two of them particularly, and offered them an indemnity, which they declined. As against the defendant company, there was a clear case for continuing the injunction. As regarded the other defendants, Messrs. Ginner, Morton, and Goddard, there appeared to be some conflict of evidence as to whether they intended to sell the soap, and at that trial they might succeed in satisfying the judge that they did not intend so to do. He did not wish to prejudice that part of the case by anything he now said, but, looking at the balance of convenience, he thought there would be no injury done by granting an injunction, whereas by refusing it great injury might be done to the plaintiffs. If Messrs. Ginner, Morton, and Goddard preferred to give an undertaking, without prejudice to any question, not to sell, he was quite ready to accept it. Mr. Micklem said his clients would give such an undertaking. His Lordship accepted the undertaking, but granted an injunction as against the Brooke Soap Manufacturing Company, the plaintiffs giving the usual undertaking to be answerable in damages, the costs of the motion to be costs in the action.

#### RIDICULOUS FINES AT CORK.

AT Cork, on March 30, before Messrs. M. D. Daly and R. Tilson, Mr. Jeremiah Buckley, farmer, Bishoptown, was summoned by Sergeant Kennedy, Inspector under the Food and Drugs Act, for having sold milk on March 6 which was 10 per cent. below the Somerset House standard. Mr. B. Galvin, solicitor, appeared for the prosecution, and Dr. H. Wynne, solicitor, appeared for the defendant.—Sergeant Kennedy stated



that he purchased a pint of the defendant's milk on March 6, divided it in the usual way into three parts, and the part analysed by Mr. O'Mahoney was found to be 10 per cent. below the standard, and it was of a low quality.—In answer to Dr. Wynne—I don't know exactly what the words "low quality," as applied to milk, means. Dr. Wynne said he could prove positively that the milk had not been interfered with from the moment that it was taken from the cow until it was sold to the customers. His client was a man against whose character or reputation a word could not be breathed, and he had never done a dishonourable act in his life.—Mr. Galvin: I don't make the slightest imputation against the defendant's character.—Dr. Wynne: The question was simply this—was the milk tampered with or was it not? and he would prove to the satisfaction of the Bench that no person interfered with the milk from the time it was taken from the cow. It was a familiar fact that the results of these analyses were frequently not reliable, and his contention in this case was that the analyst had made a mistake.—Mr. Buckley, the defendant, examined, stated that he was present at the milking of the cows on the 6th March. He saw the milk put into the churn and saw it despatched to the city under the charge of his son. He did not tamper with the milk, his son did not tamper with the milk, and it could not have been tampered with unknown to him or his son.—To Mr. Galvin: The churn was not secured with a padlock. There were 18 gallons put into the churn.—Mr. Buckley's son said that he took over the milk from his father and took it into the city, and he did not tamper with the milk, and it could not have been tampered with by anyone.—Mr. Farrington, analyst, said that he analysed Mr. Buckley's sample of the milk, and found that it was  $6\frac{1}{2}$  per cent. below the standard. The milk as it came from the cow was often below the Somerset House standard. It was a fact that at this time of the year atmospheric conditions had an injurious effect on the milk, so as to render it of low quality. The magistrates said they did not believe for a moment that there was even an intention of fraud on the part of Mr. Buckley, and it was greatly in his favour that his milk had been tested on more than half-a-dozen occasions, and that nothing was found wrong with it. The law compelled them to convict, but they would only impose a fine of 2s. 6d. and 10s. costs.—Mr. Daniel Buckley, Kilcully, farmer, was prosecuted, under the Food and Drugs Act, for selling milk on the 6th of March, which was 10 per cent. below the Somerset House standard. Mr. A. Julian appeared for the defendant, and Mr. B. Galvin prosecuted on behalf of the Corporation. By consent of the Bench, and both solicitors, the case was adjourned for a month.—Mr. Michael Murphy, milk vendor, 19, Gould-street, was also summoned under the same Act for a similar offence on the same date. Mr. W. Murphy, solicitor, appeared for the defendant, and Mr. B. Galvin prosecuted. Mr. Galvin handed in the analyst's certificate, stating the milk was 10 per cent. below the standard. Evidence was produced on behalf of the defendant, proving that the milk had not been tampered with. The Bench imposed a fine of 2s. 6d.

#### INFERIOR MILK IN GLASGOW.

THE following cases were brought before Sheriff Fyfe in the County Buildings, on March 30, at the instance of the Sanitary Department, who were represented by Mr. John Lindsay, Assistant Clerk of Police:—

Thomas Reid, jun., wholesale milk dealer, 135, Allison-street, Crosshill, was convicted of having, on March 5, sold to Inspector Kerr sweet milk which, on analysis, was found to contain 7 per cent. of added water.

Respondent said that the only explanation he could give of the water being in the milk was that the refrigerator, which was used for cooling the milk, was leaking, and that the water from the refrigerator must

have got into the milk. He did not examine the refrigerator. In answer to the Sheriff, the respondent said that he sold milk to about a dozen persons who were, to some extent, wholesale dealers, and to at least 200 retail dealers in the city.

The Sheriff pointed out that, assuming the accuracy of the respondent's statement, it showed that he had been guilty of gross negligence in not examining the refrigerator; and the case was aggravated by the fact that he had admittedly sold milk to over 200 innocent dealers, who were liable to be tried before a court for having sold milk adulterated with water. He imposed a fine of £8.

John Logan, dairyman, 26, Parliamentary-road, was convicted of having on March 6 sold sweet milk to Inspector Armstrong which was deficient in 19 per cent. of natural fat.

The respondent said that when the officers called there was only a small quantity of milk left in the can, and that as the milk decreased the quality weakened. He had got milk from the same farmer for ten years, and had never had any cause of complaint. He had 50 or 60 gallons of milk in the shop at the time, and did not want to give any milk out of the can, as it was so nearly empty, but the officer said he would get credit for that.

Mr. Lindsay said that on the morning in question an anonymous letter was received by the Sanitary Department complaining of the quality of the milk sold in dairies at the east end of Parliamentary-road. The officers first visited the shop of Logan, and it was then about 10 45.

The Sheriff imposed a fine of £5.

Katherine Hardy, dairy-keeper, 17, Parliamentary-road, was convicted of having, on the same day, sold to Inspector Armstrong sweet milk which was deficient in 22 per cent. of natural fat. Miss Hardy said that she sold the milk precisely as she got it from a wholesale dealer. She had complained to the latter about the milk, and had since stopped buying from him.

Mr. Lindsay said that this shop was also visited in consequence of the receipt of the anonymous letter referred to.

The Sheriff imposed a fine of £3.

Agnes Edgar, dairy-keeper, 116, Allison-street, Crosshill, was fined in a similar amount for having on March 5 sold to Inspector Kerr sweet milk which contained 12 per cent. of added water. She said that she sold the milk as it was received from the farmer.

Helen Sutherland, dairy-keeper, 305, Cumberland-street, was also fined £3 for selling to the same officer sweet milk which was deficient in 20 per cent. of natural fat.

Mrs. Christina Jackson, dairy-keeper, 346, Gallowgate, who sold to the same officer sweet milk which was deficient in natural fat was also fined £3. In each of these two cases the excuse was that the milk was sold as received from the wholesale dealers.

#### ADULTERATION IN NORFOLK.

THE Analyst, Mr. F. Sutton, reported that during the past year 140 samples of food, etc., had been examined, a larger number than was arranged for the salary of £100, but he was always willing to examine a certain number of articles as trial cases only; and he had during the last quarter asked the police to collect some samples of mixed coffee, or a mixture of coffee with chicory. He had long had a suspicion that in this county some very extreme mixtures were offered for sale, and the result of his examination proved it to be so, but as the label was supposed to protect the seller, he could not issue a certificate for prosecution. Nevertheless it was a very serious matter to find that coffee was sold with over 90 per cent. of chicory. Coffee, like tea, contained an active principle which was really an essential food, whereas chicory contained nothing of the sort. No such trading as this ought to be allowed. There was still the collection of samples



by the police, each man in his own district, and as heretofore he protested that by such an arrangement it was almost impossible to ascertain the actual amount of fraudulent dealing which went on in the county. The percentage of adulteration for the year ending 25th ult. is 9.28, and if the samples of coffee were included it would be brought up to about 12 per cent., which was a high result.

#### MARGARINE, BUTTER, AND CHEESE.

IN the course of the report on the trade of Amsterdam for the year 1895, Consul Robinson remarks that the years of prosperity for the producers of margarine appear to have passed away for the present. He attributes this fact partly to the difficulties placed by most countries in the way of the sale of artificial butter, and partly to the very greatly increased importation of Australian butter into Great Britain. The exportation of pure butter from Holland to England was in 1893, 142,811 cwts.; in 1894, 165,157 cwts.; and in 1895, 191,221 cwts. The exports of margarine from Holland to England decreased from 1,229,737 cwts. in 1893 to 1,045,330 cwts. in 1894, and to 878,827 cwts. in 1895. The prices of margarine averaged between about £1 18s. and £2 per cwt. There was a slight increase in the exportation of cheese to England, which amounted to in 1893, 269,364 cwts.; in 1894, 298,693 cwts.; and in 1895, 305,920 cwts.

#### WATER AT SPIRIT PRICE.

AT Mansfield Petty Sessions on April 2, William Fielding, landlord of the Railway Inn, Station-street, Mansfield, was summoned at the instance of Colonel Story, inspector of weights and measures, for having sold adulterated whisky on the 20th ult. Prosecutor stated that he purchased some whisky from the defendant on the day named, and divided it in the usual way, one sample being forwarded to the public analyst, whose report he handed in. The amount of added water was 39.5 per cent., this being 17 per cent. more than allowed by law. Defendant had nothing to say other than "If I had given it a thought when you asked me for whisky I ought to have said whisky and water." (Laughter). Col. Story said the case was a bad one and he pressed for a heavy penalty. As defendant had never previously been before the court he was fined £2 and costs.

At Bradford, on April 2, Henry Stead, landlord of the Union Hotel, Adwalton, was summoned for selling adulterated whisky. Mr. Alexander Quinlan, inspector under the Food and Drugs Act, stated that he visited the defendant's house on February 21, and purchased a pint of Irish whisky. A sample of the spirit was forwarded to the public analyst, who had certified that it was 32.8 degrees under proof, thus exceeding the limit of 25 degrees by 7.8. The defendant said that he had been very ill, and the spirits had been "made up" by an adopted son who had charge of the house. A fine of 20s. and 33s. 6d. costs, including the analyst's fee, was imposed.

#### CHELTENHAM MILK.

A CORRESPONDENT asks: "Is there no officer in Cheltenham whose duty it is to see that articles of food

sold are pure and unadulterated? I have tried seven dairies here, and in none of them can one procure pure milk, *i.e.*, in which there is the natural quantity of cream. It is a fraud to deliver skim as pure milk, and if there is an officer, whose duty it is to see that milk is sold as it comes from the cow, and he did his duty, one should not, in a pastoral county such as this, be obliged to take as milk a make-believe inferior in quality to that sold in a great city like London."

#### EDINBURGH MILK.

AT a meeting of the Royal Society of Edinburgh on Monday, a very interesting paper on "Bacteria in Milk as supplied in Edinburgh, and the relative efficiency of different methods for their removal," by Dr. Hunter Stewart and Dr. Buchanan Young, was read. After alluding to the importance of preserving human beings from those diseases which were produced by the presence of micro-organisms in milk, Dr. Stewart laid emphasis upon the fact that cowhouses in this country were not kept with that careful and punctilious cleanliness with which they were kept in Holland and Denmark. The animals were not groomed, the cowsheds were not flushed with water so often as they ought to be; the hands and clothing of the milkers were not properly attended to, nor were the teats of the udder cleaned. The results of experiments conducted in Edinburgh, and extending over the last 18 months, revealed a most significant state of matters in regard to the condition of the milk product of town dairies. More than 300 samples of milk from 50 dairies widely scattered over the city were examined, and it was found that at three hours after milking there were on an average per cubic centimetre in winter 24,000 bacteria, in spring and early summer 44,000, and in late summer and autumn 173,000. It was found that in dairies supplied with milk from the country the average number of micro-organisms five hours after milking was 41,000 per cubic centimetre, while in dairies supplied with milk from town buyers the average was 352,000 per cubic centimetre. This fact demonstrates the extreme importance of having cow-houses situated clear of the town boundaries. The various methods of sterilising milk were discussed. It was stated that milk kept for one hour at 212 degrees in bottles hermetically sealed, remained sterile for more than a month; milk heated by Dr. Cathcart's apparatus remained quite sterile for 48 hours; and that milk kept for 30 minutes at 158 degrees Fahrenheit was quite sterile at the end of 24 hours, and contained very few microbes at 48 hours. In all these three methods the micro-organisms of tubercle and diphtheria were certainly killed.

#### A J.P.'S WATERED MILK.

AT Marylebone, on April 2, Charles Maggs, a justice of the peace for Wiltshire, trading as the Frome Dairy Company and also as the Melksham Dairy Company, appeared in answer to three summonses, taken out by the Paddington Vestry, for selling milk from which 20 per cent. of butter fat, or cream, had been abstracted, and for selling milk containing 8 and 7 per cent. of water respectively. The defence was that the milk was received from farmers and sent to London in the same

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state. There was a previous conviction, when defendant was fined £10. Mr. Curtis-Bennett observed that it was clear the milk had been tampered with, and defendant was responsible. Fines and costs amounting to £10 7s. were inflicted.

#### SOMERSET AND ADULTERATION.

DR. H. J. ALFORD, the county analyst, reported that the number of samples analysed during the quarter was 295, of which 10 were found to be adulterated. None of the adulterations was prejudicial to health.

**MORE AWARDS FOR JEYES' DISINFECTANTS.**—This company have been awarded two further gold medals at the following Exhibitions—viz.: Lancashire Trades and Industrial Exhibition, held at Bury, and General Trades, Food, Cookery, and Industrial Exhibition at Colne.

### CORRESPONDENCE.

#### RADAM'S MICROBE KILLER.

*To the Editor of FOOD AND SANITATION.*

SIR,—Could you oblige a reader of your valuable paper upon the value of the patent medicine particulars of which you will find in the enclosed pamphlet? An answer in your next issue would greatly oblige, yours faithfully,

W. F. COOKE.

10, Bright-road, Bristol, 2nd April, 1896.

[The pamphlet sent has a number of the usual sort of quack eulogies and assertions that "Wm. Radam's Microbe Killer is a safe and rapid cure for such as chills, colds, sore throat, quinsey, croup, diphtheria, neuralgia, influenza, inflammation of the lungs, pleurisy, pneumonia, measles, scarlet fever, rheumatism, typhoid, typhus, puerperal, enteric and small-pox, cholera, diarrhoea, whooping cough, hydrophobia, anæmia, asthma, blood poisoning, bronchitis, bladder troubles, cancer, consumption, etc." This nostrum, with its scores of testimonials from people as gullible as those who lauded Harness's belts, or the Ammoniaphone which was to make us vocally all nightingales, was some years ago composed of pure water charged with the gases generated from the following ingredients:—Flowers of sulphur, nitrate of sodium, black oxide of manganese, sandalwood and chlorate of potash. In 1889, Dr. Eccles published an analysis of this preparation, upon which he based the following formula:—

|                         |   |   |           |
|-------------------------|---|---|-----------|
| Oil of vitriol (impure) | - | - | 4 drams.  |
| Muriatic acid (impure)  | - | - | 1 dram.   |
| Red wine, about         | - | - | 1 ounce.  |
| Well or spring water    | - | - | 1 gallon. |

Our readers can judge of the likelihood of its being a cure for the preceding list of ailments.—ED.]

#### MARGARINE PROSECUTIONS AT ASTON.

At the Aston Police-court, on April 1, before Messrs. Yates, Barnsley, and Rollason, Philip Froggatt, grocer and provision dealer, 162, High-street, Aston, and Alfred Glover, 178, High-street, were each fined £5 and costs for exhibiting unlabelled margarine on the 6th ult. Mr B. Bolt, inspector under the Food and Drugs Act, purchased from each a quantity of a substance which appeared to be butter, but which was found in the first case to be adulterated with 70 per cent. and in the second 65 per cent. of foreign matter.

#### A CURIOUS COFFEE CASE.

At North London, on April 1st, Francis D. Ford, grocer, of Oldfield-road, Stoke Newington, was summoned before Mr. Paul Taylor for selling coffee adulterated with 30 per cent. of chicory. Mr. Webb, Vestry Clerk of Stoke Newington, prosecuted, and Mr. C. V. Young defended. Mr. Young said he had two good grounds of defence, one of which was that the offence was not set out on the summons, and the other that the coffee which the defendant sold was absolutely pure. Brown, the sanitary inspector in the employ of the Vestry, produced a certificate, which said that a sample of coffee submitted for analysis was adulterated with 30 per cent. of chicory. Mr. Young asked the inspector how he identified the certificate produced with the sample taken, because the sample was numbered, but the certificate was not. The inspector replied that all he could say was that that was the sample of coffee he took on that particular day. Mr. Young called Mr. Albert James De Hailes (Redwood and De Hailes, analysts, of Red Lion-square), who said he had examined the sample of coffee submitted to him as one portion of that purchased by the inspector for analysis, and found

it to be absolutely pure coffee, and corresponding in every way with the sample of beans sent him as a portion of the bulk from which the coffee had been ground. Mr. Webb asked that the case might be adjourned, to enable him to call the Vestry analyst; but Mr. Paul Taylor thought this unnecessary. There must have been a mistake. The samples must have got mixed. There could not have been this discrepancy between two analysts. One said 30 per cent. adulteration, and the other that it was absolutely pure coffee. Mr. De Hailes (re-called) said it was impossible for an analyst to have made such a mistake with coffee. Mr. Paul Taylor said he considered that a mistake had been made. Mr. Young—And a serious one for my client. Mr. Paul Taylor—Yes, and he will have £3 3s. costs.

#### THE PRESCOT WORKHOUSE AND ITS MILK.

At the Prescott Police-court on April 7, Thos. Ward, farmer, Chorley-house Farm, Whiston, was charged with supplying to the guardians of the Prescott Union milk which was not of the nature, quality, and substance demanded. Mr. T. Swift (instructed by Messrs. Swift and Garnet) prosecuted on behalf of the guardians, and Mr. J. O. Swift defended.

Mr. T. Swift, in opening, said in the month of June, 1893, the guardians entered into a contract with the defendant for the supply of milk to the union for the coming three years. The defendant's tender, which was accepted, was dated June 14, 1893. On that it was stated that the quality of the articles was to be the best of their kind. New milk, 50 gallons daily were required except on Friday, when the quantity required would be 70 gallons. The new milk was to be free from adulteration, 100 degrees by lactometer, yielding six degrees of cream, one degree being one-eighth of an inch, in a tube of eight inches in length, the milk to be tested on each delivery, and should it fail to give the stated yield a deduction of 2d. per gallon for every degree or portion of a degree of cream short of six degrees would be made when the account was paid. The form of tender further stated that the results of the tests would be kept in the master's office, and the contractor might see them on making application to do so. The milk was supplied by the defendant up to February this year, when the guardians instructed the workhouse master to take two tests of the defendant's milk, one on the evening of the 24th February, and another on the morning of the 25th February. On the latter date the workhouse master, Mr. Williams, left instructions that before delivering the milk Mr. Ward should see him. Ward came to the office about eight o'clock on the Tuesday morning, and when he delivered the milk the workhouse master filled two bottles of it as samples in Ward's presence, telling him it was for analysis. Ward asked him to take the samples the following morning, but Mr. Williams declined and said he must carry out the guardians' instructions. The sample had been sent for analysis to Liverpool, and Dr. Campbell Brown and Mr. Collingwood Williams, of Brownlow-hill, certified that it contained 2.44 degrees fat, 6.77 degrees other solids, 9.21 degrees total solids, and that upwards of 25 parts of water had been added to every 100 parts of the poorest milk, which had also been deprived of part of its cream.

Mr. Williams, workhouse master, corroborated Mr. Swift's statement. Mr. J. O. Swift said he would require the attendance of Dr. Campbell Brown for cross-examination.

Mr. T. Swift said that particular request was one that could not be resisted, but he wished he had known earlier, as it would have saved their worships' time. The usual practice was for the defendant to give notice that he required the attendance of the analyst. At this point there was handed to Mr. Swift a notice, signed by the defendant Ward, stating that he did not require the attendance of Dr. Campbell Brown.

Mr. J. O. Swift said that when the defendant was served with the summons a piece of paper was pushed under his nose to sign. He was asked to say whether he required the analyst or not before having time to consult with his legal adviser, and he was told if he did require one he would have to pay his fee for attendance. It was not for the prosecution or the police to say whether he would have to pay or not. It was for the magistrates, if they decided to convict, to say whether they thought it right that the defendant should pay the costs. The signature had been obtained by duress.

Mr. T. Swift said that there had been no duress; the summons had been served a week before the signatures were obtained.

It was then decided that the case should be adjourned for a month.

Mr. J. O. Swift said his client had had the milk analysed, and the certificate he obtained was entirely opposed to Dr. Campbell Brown's, and he hoped to show, if it ever became necessary, that the milk was genuine milk.

It was decided that the sample of milk should be sent to Somerset-house for analysis.

#### SALT IN BEER.

At the Spelthorne Petty Sessions, held at Sunbury on March 30th, Charles Hucker, Royal Oak Hotel, High-street, Teddington, was summoned by Mr. Walter Tyler, inspector under the Food and Drugs Act for the Western division of Middlesex, for "selling beer not of the nature, substance and quality of the article demanded, the beer containing 72 grains of salt per gallon, whereas genuine beer contains from 30 to 60 grains."

Mr. G. W. Lay, solicitor, defended, and at the outset objected to the summons on the grounds that it disclosed no offence, that there was no standard with regard to what was or was not genuine beer, although there was one in connection with milk, spirits, and the like; and also that the summons was taken out contrary to the form of the statute. He cited cases in reference to his contention, and



remarked that if it were found, and they were satisfied, that salt was an ingredient which was and must be used in the preparation of beer, then the jurisdiction of the Bench would be ousted.

Inspector Tyler said the summons was taken out under the 6th section of the Food and Drugs Act, 1875, and clearly set out the offence. The most important question the Bench had to consider was what was a reasonable amount of salt to be found in beer after allowing for the natural salt to be found in the water with which the beer is brewed. Genuine beer contained from 30 to 60 grains of salt per gallon, and the Home Secretary had placed the limit at 50 grains.

Mr. Buckmaster, a member of the Bench, said that different waters contained different quantities of salt, and to arrive at a proper conclusion in the present case the Bench ought to have an analysis of the water with which the beer sold to the inspector was brewed.

Mr. Randall, the inspector's assistant, deposed to the purchase of a pint of beer from the defendant's wife.

Inspector Tyler said that at the defendant's request the liquid was divided into three parts, and one was sent to the public analyst, whose certificate was as follows:—"The sample of beer contains salt to the extent of 72 grains per gallon. Genuine beer contains from 30 to 60 grains per gallon."

The Bench asked for the inspector's evidence as to the analysis of the water at Messrs. Burroughs and Coles' brewery, Twickenham, where the defendant's beer was brewed, but

Mr. Lay protested, arguing that such evidence was not admissible.

The Bench insisted on the evidence being given.

Inspector Tyler stated that when he visited the brewery Mr. Burroughs gave him permission to take some of the water that had been used in the brewing of the beer.

Mr. Lay said he should call evidence to emphatically refute this statement.

Edward Bevan, the public analyst for Middlesex, said the analysis of the water supplied to him showed that it contained 5.2 grains of salt. In regard to beer, his own experience had proved that the average percentage of salt in that liquid was 29½ grains per gallon. He had found it to go as low as seven grains, and the highest percentage he had ever known was in the present instance.

In reply to the Bench, the witness said that, assuming that the water with which the beer was brewed contained 5.2 grains of salt, he would certainly not expect to find 72 grains of salt in a gallon of beer in the brewing of which that water was used.

The Bench overruled Mr. Lay's objection to this evidence.

The defendant deposed that he had sold the beer as he received it.

Mr. Richard Woodley Burroughs said the water taken by the inspector from the brewery was not that which was used in the brewing, and he told Mr. Tyler of that fact when he took the sample. He considered that 72 grains per gallon was not an excessive amount of salt, and his firm had always put that amount of salt in their beer. Some beers contain a much larger percentage, and in "Yarmouth" ales the average is 125 grains. During the 300 years this firm had been established they had never been summoned themselves, nor had any of their customers been summoned in respect of the amount of salt in their beer.

The Bench dismissed the case, the Chairman stating that the last witness's evidence clearly proved that the defendant did not add any salt to the beer. The magistrates themselves thought that 72 grains was an excessive amount of salt.

## FOOD PRESERVATIVES.

By R. T. THOMPSON, F.I.C.

(Continued from page 167.)

THE experiments of which the results are recorded in Table I. were made by adding the proportion of preservative decided upon to about 8 ounces of milk, keeping the mixture in corked bottles, and examining them periodically, by smell and taste, and titration, for free acidity. A portion of the same sample of milk was employed in each case, and for the sake of comparison one of the trials was made with the pure milk, without the addition of any preservative. In this set of trials the amount of preservative employed was varied so as to observe the effect of the different quantities. These were carried out in January, 1895, the average temperature of the room in which the milk was kept being about 50 deg. Fahr., and the variation in this respect never exceeding 5 deg. Fahr. up or down. The trials represented in Table II. were made in February of this year (1896), the conditions, including that of temperature, being similar or indeed identical with those of Table I., the only difference being that the proportion of antiseptic employed was precisely the same in each case, except in that where peroxide of hydrogen was used. The quantity of preservative taken—namely, 35 grains per gallon of the milk—was fixed upon, because that is the amount usually added to milk which is preserved with boric acid, or a mixture of that substance and borax. By employing the same proportion of other antiseptics, we institute a comparison

between these and the preservative in borated milk as usually supplied. The experiments of which the results are given in Table III. were undertaken with a different intention from those just described, the object in this case being to determine the comparative value of the same antiseptics with regard to their power of preserving sugar solutions—such as unfermented wines—from fermentation. These trials were made by adding a little yeast to a solution of dextro-glucose or grape sugar of specific gravity 1.016, then adding the amount of preservative fixed upon, and allowing to stand in loosely-corked bottles at an average temperature of 50 deg. Fahr. As in the case of milk, one of the experiments was made with a portion of the glucose solution to which no preservative had been added. Each trial was made with a portion of the same solution, and contained an equal weight of the same sample of pressed yeast, so that the conditions were identical in all respects, except as regards the kind of antiseptic added.

We shall now go on to the study of each antiseptic individually, endeavouring in the first place to fix its value as a preservative, both absolutely and relatively, from the results of our experiments, as well as from other sources; and, in the second place, we shall endeavour to collect any really valuable information with regard to the advisability of using any of these antiseptics as food preservatives. The first of these to which I would draw your attention is the well-known

*Carbonate of Soda.*—From the results given in Table II. it is evident that this salt has very little, if any, antiseptic value, and it has usually been assumed that it merely corrects any acidity produced until the soda is neutralised. Its effect, as was to be expected, in retarding the fermentation of glucose by yeast, was decided, as 8 per cent. less of the total sugar present was converted into alcohol than in the case of the pure glucose solution. As carbonate of soda is too ineffective to be used to any extent as a preservative for foods, we need not deal minutely with its physiological action, and may only note that its regular consumption with food is said to be objectionable by good authorities, especially in articles of diet intended for children.

*Carbolic Acid.*—This is one of the substances which would be described as an antiseptic or disinfectant, as owing to its distinctly poisonous qualities, it could not even be suggested as a food preservative. Experiments were made with it also, as it is undoubtedly interesting to note how it compares in preserving power with the less objectionable preservatives proposed or in use. The variety used for the trials was the pure crystalline compound, which is strictly called carbolic acid or phenol, and it will be observed from Tables II. and III. that it has some preservative power as regards preventing, or, rather, retarding, the fermentation of milk and glucose, but this is not by any means of a high order.

*Cresylic Acid.*—The common liquid variety of carbolic acid really consists very largely of cresylic acid, but this coal tar derivative is now being manufactured itself for disinfecting purposes, and apparently even at a cheaper rate than the commonest so-called carbolic acid. Unlike pure phenol, cresylic acid or cresol is a liquid at ordinary temperatures, and is not nearly so soluble in water as the former. Like carbolic acid, however, it possesses decidedly poisonous properties, and could not in any circumstances be recommended for use in the preservation of food. From Tables II. and III. it is apparent that cresylic acid is identical with carbolic acid in power of preserving milk and glucose solutions from the lactic and alcoholic fermentation respectively. As a disinfectant, cresylic is usually classed higher than carbolic acid, but the possibility is that they are very much on a level in this respect, although we cannot draw the conclusion that a good milk preservative must also be a good disinfectant.

(To be continued.)



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# Food & Sanitation

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M. DE FREYNET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—  
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v.  
THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.

**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

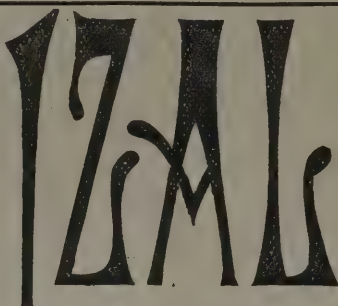
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## Food and Sanitation.

SATURDAY, APRIL 18TH, 1896.

### STILL PROGRESSING.

THE last official report of the Local Government Board, 1894-95, shows an increase of some 2,300 samples taken for analysis over the quantity analysed during the previous twelve months. We can legitimately take to ourselves the credit of this increasing activity in suppressing adulteration, because when we began our attacks on free fraud in food stuffs there was stagnation everywhere throughout the kingdom, with the exception of about a dozen places. But there yet remains much to be done before adulteration can be said to be adequately coped with. The fact that no less than thirty-seven districts still ignore the Acts and foster

thievery, and that these include supposedly enlightened places like Great Yarmouth, Stockport, Northampton, Norwich, Warrington, Ipswich, and that sink of food frauds Tynemouth, shows that nothing short of a compulsory Act can cope with the evil, and that it is folly to leave such a question as the suppression of adulteration to the option of bodies composed often of individuals deeply interested in the frauds the Acts are designed to suppress. Again, the number of samples taken, even where the Acts are enforced, is far too low. One sample per 500 population should be the minimum.

Somerset House, after Mr. Hehner's eviscerating onslaught upon it before the Select Committee, and Mr. Bannister's lamentable failure to defend the department, is no doubt doomed, and its removal from a position it has so grossly failed in has become a recognised necessity. The vexed questions of warranty, mixtures, strengths of vinegar, etc., will all require to be settled in a manner fair to manufacturer, vendor, and public. Pending the report of the Select Committee, it is gratifying to be able to record such material progress as this increase of 2,300 samples in one year.

### MURDEROUS AMERICAN OILS.

WE trust the Select Committee of the House of Commons will secure the evidence of independent and uninterested chemists upon the question of the flash-point of mineral oils. The Society of Chemical Industry at its various branches has been practically unanimous in condemning the Abel flash-point as a cruel method of roasting alive hapless Englishmen, women, and children, that the gang of saintly American perpetrators of arson and dynamite explosions may dispose of 30 per cent. of refuse oils, which the United States will not allow to be sold there. At Glasgow, on April 7, the Society of Chemical Industry resumed the discussion on the paper read by Mr. D. R. Steuart at the March meeting on the standard of flash-point for mineral oil. It was insisted that lamp accidents were never heard of in Scotland, where the native oil was almost exclusively used, and the conclusion arrived at was that burning oil of 73 degrees flash-point having proved itself dangerous, the flash-point ought to be raised to 100 degrees Fahrenheit as a plain measure of public safety.

The Select Committee has a difficult task. It has to face the evidence of the most venal gang of "expert" witnesses that disgrace science in England, and who are in the pay of the American oil rascals. The American wire-pullers are already boasting that they can twine the Select Committee round their fingers. Our House of Commons has, however, a character different from their Congress, and our judges are not the sort of men who inflict 500 dollars fines on scoundrels found guilty of attempted dynamite explosions; so, altogether, their jubilation may be premature. It ought to be when the question is one of saving one unfortunate fellow-creature per day from being roasted alive, and this the 100 degrees flash-point would do.

### TINNED FOOD REVELATIONS.

COUNCILLOR HENRY WALTER GRIFFIN, of South Naylor-street, St. Helens, was summoned, on April 13, on a charge of having for sale twenty tins of salmon which were in a putrid condition and quite unfit for the use of man. The Town Clerk prosecuted, and Mr. H. L. Riley defended.—The Town Clerk stated that on March 27 a man named Miller brought to Inspector Smirthwaite a tin of salmon which he said had been purchased at defendant's shop the preceding day for 4½d. A young person in the shop who sold it said it was perfectly fresh. Miller sent it back and asked for his money, but the young person refused to give the money back, and offered him another tin of the same sort. He refused to accept another



tin, and took the original tin to the inspector. The salmon was rotten, and Dr. Robertson being consulted, he told the inspector to purchase three more tins from the defendant. A child was sent for one tin, and Smirthwaite went himself in plain clothes for the other two. The salmon in these three tins was found to be rotten, and the remaining seventeen tins in the shop were seized. Out of twenty-one tins twenty were certified to be bad, and the salmon was ordered to be destroyed by Mr. Tyrer, J.P. The appearance of the tins themselves, the Town Clerk said, was quite sufficient to indicate that something was wrong. The tins were musty, and the original labels partly scraped off, and fresh labels gummed on. The "liquid filth" was emptied and the tins kept. Defendant said he had purchased it from a man named Hughes, at Wigan, and that man, the Town Clerk said, had been committed without the option of a fine for selling tins of salmon in a rotten condition.—Replying to Mr. Riley, the inspector stated that Mr. Griffin suggested that they should get a trap and drive round to try and discover the man Hughes. He did not know whether Mr. Griffin ultimately discovered Hughes' name and address, and that in consequence the medical department were enabled to telegraph to Wigan.—Thomas Miller, bootmaker, 22, Ashcroft-street, who had purchased one of the tins, said it was nothing but "putrefied stuff."—Dr. Robertson, medical officer of health, described the condition of the salmon, and in answer to the Town Clerk said some of the tins were "blown." This term was applied to where the contents, not being perfectly good, generated gas and bulged the tin out. It was a term signifying "not perfect." Where there were two punctures, it showed the tins had been boiled over again.—Mr. Riley: That can, I suppose, only be done at the factory, and not by an intermediary?—Dr. Robertson: An intermediary can do it quite as well as it could be done at the factory. Dr. Robertson further stated that Mr. Griffin told him Hughes, of Wigan, had sold it. He (Dr. Robertson) promptly communicated with Wigan.—Mr. Riley: With the result intimated by the Town Clerk. Was it not Mr. Griffin's attitude from the first to discover the man who had practised the fraud upon his shopwoman?—Dr. Robertson: I think that was his attitude.—Mr. Riley said that the man Hughes admitted he put the new labels on the tins. While Mr. Griffin bowed his head to the technical responsibilities, he (Mr. Riley) trusted the bench would not send him forth discredited or disgraced.—The assistant, Minnie Lee, was then called. She said Hughes called, and she exchanged four dozen tins of greengage for three dozen tins of salmon.—Eliza Richardson, middle-aged, confirmed the transaction between Hughes and Miss Lee in Mr. Griffin's absence.—Miss Lee (re-called) said fifteen tins had been sold before the remainder were seized.—Charles Howett said he heard Hughes tell Miss Lee the salmon was good. He only bought the best of salmon.—Chief Sanitary Inspector Sumner, of Wigan, deposed that he received information from Mr. Griffin and Dr. Robertson simultaneously, and he went and seized large quantities of bad fish and fruit at Hughes's house. Hughes had been committed for one month.—Mr. Riley said that, acting for Mr. Griffin, he at once served notice on Hughes, claiming damages.—The magistrates considered the case exceedingly serious. Such fish was not only poisonous, but poisonous in the extreme degree. It was known that more people were actually poisoned by bad fish than by almost anything else. There had been a great deal of fever in the town, and the difficulty had been to find out the cause. It was not at all unlikely that it came from sources of this kind. The Bench had determined to fine the defendant £10 and costs.—At the Wigan Police Court, on April 9, John Hughes, of Platt-lane, a wholesale dealer, was summoned for having in his possession intended for sale 1,233 tins, consisting of lobster, salmon, and preserved fruits. Inspector Sumner stated that he visited defendant's

house, and found most of the goods in the kitchen being re-labelled. Upon being opened, they were discovered to be unsound and totally unfit for human consumption. Witness opened thirty tins, and found them all in a state of putrefaction. They were subsequently taken before Mr. Peterkin, J.P., who declared them to be unsound, and they were destroyed upon the magisterial order at the Corporation depôt.—Dr. Berry, medical officer of health, said they were so decomposed that they could hardly tell the difference between lobster and salmon.—The defendant made a statement to the bench as to how he had obtained them, ultimately admitting that he had purchased them much below market price, and had bartered for them by exchanging a trap. He also stated that the Liverpool inspector of food and drugs had passed them as sweet and clean.—The Bench severely criticised the transaction, and pointed out the dangerous results that might have come about by the dissemination of such food stuffs.—The defendant was sent to gaol for one month without the option of a fine.

#### FOREIGN MILK COMPETITION.

In the autumn of 1893 a company was formed, with branches in Denmark and Sweden, for the exportation, principally to England, of milk frozen by the method discovered some time previously by M. Casse. In the Journal of the Board of Agriculture is found an interesting description of the method in which the trade was conducted. The milk leaves Gothenburg on Thursday, and arrives in London on Saturday. On the Monday morning it is delivered from the ship and taken to an establishment four miles off, where it is distributed for sale. Over each barrel is placed a melting apparatus into which the milk is packed and melted by means of hot water, so that the milk when thawed runs down into the barrel. The milk is then well stirred before the tapping takes place. The empty barrels are returned to Gothenburg by the next steamer. They are cleaned by hot lime water, and also with steam in a special manner. In the cold weather the barrels of milk are sent to Gothenburg in open railway cars covered with a tarpaulin. In autumn and spring there is a cover of sawdust under and over the barrels, while in both winter and summer, when conveyed by sea, they are placed in sawdust, and also surrounded by it and covered with tarpaulins on which sawdust is spread.

#### BUCKS DAIRY FARMERS' ASSOCIATION AND THE PRICE OF MILK.

MR. HINTON recently read a paper on the best means of staying the downward price of milk in the London markets, as follows:—"I think it is quite high time we bestirred ourselves to see if we cannot save ourselves, and our occupation as milk producers, from any further loss. The price of that most important article of food has now become so bad that it is only on just the best dairying pastures that milk can be produced without loss, and so long as the market is overdone so long will the price continue to go down, as the purchasers are bound to take advantage of the abundant supply. Now the question comes, 'what can we do to better regulate that supply, and successfully treat with the surplus milk?' Some have suggested that we establish a factory in each dairy county, but for my part I think our object would be much better obtained by establishing one central factory in London, where all the extra milk might be dealt with and made the best of by separating and selling the cream, also butter making, the skim milk being disposed of in the East-End and other poor neighbourhoods at a low price. I suggest also that we establish an agency in connection with the factory, through which the whole of the country milk would be sold, so that we might obtain a fair price for a good



article, our present customer always having the first offer of the dairy, which would be sent on to him just the same as it is now, he paying only  $\frac{1}{4}$ d. per imperial gallon to the society more than present price (or such as may be decided upon) for the accommodation of having just the quantity he requires, the remainder being sent to the factory, consequently leaving the retailer no waste, and he would also know where to run to for an extra churn when short. But by an arrangement of this kind we should not in the slightest degree injure the retailer, but rather the reverse, as one of his greatest troubles is always the regulating of his quantity. Now, to carry out this object we should have to form a limited liability company, say with a capital of £100,000, not necessarily all called up, but there would be a very large quantity of milk to be dealt with. I see last year the different railway companies carried to London 79,958,772 gallons, which, at  $\frac{1}{4}$ d. per gallon profit to the society, would return something like £166,580 annually, against which we should have to pay, on capital, etc., 10 per cent. on £100,000 working capital, £10,000; cost of working factory, £7,500; 1d. per gallon on milk kept back during the months of May and June, £10,000; head office expenses, £2,500; incidental expenses, etc., £5,000; balance left to be dealt with as bonus to farmers and reserve fund, £131,580; total, £166,580. Now, I do not think this is a farmers' question only, as it is to the landlord's interest that the land should not become unprofitable, and consequently rents reduced, and many noblemen are taking a deep interest in our societies, and if some of them could only be induced to take the matter up and become directors of such a company, I am sure we should be very grateful, and it would be bound to be a success, and then it would only want the farmers to be loyal to each other, and sell only through the society's agent to secure a fair price for our milk. Now this article is the one commodity in which the foreigner cannot directly touch us. He has tried but without success, and I do not think we have anything to fear from abroad at anything like present prices. We therefore have the matter in our own hands to say whether we shall help ourselves or not, or simply let things slide on just as they are, going from bad to worse, but I think if we can succeed in carrying out a scheme of this kind or something similar we could soon secure another 1d. per gallon, which would mean something like £300,000 between us in addition to what I have already dealt with; but, of course, if things continue as they are and sink another 1d. it means an equal loss. Now, I see that we have something like 4,500 dairy farmers sending milk to London by rail. It would not be much to say we would put down £10 each as capital, which would provide nearly half the proposed amount, and I fear we are losing much more than this for want of combination. Gentlemen, we have to choose and decide."

After discussion it was adjourned in order to obtain further particulars.

#### AN ARMY RATION WANTED.

TOUCHING Army subjects, we would mention that there is a fortune for anyone inventing a compressed ration for man and horse to be used in war, on which condition can be maintained, and yet be light of transport. The Americans have been carrying out experiments with an "emergency ration," as it was named, but they have turned out most unsatisfactory. Twenty-two ounces per diem per man was the amount fixed upon to maintain health and condition in the man, but the medical authorities raised the allowance to 26ozs. It was made of concentrated bread, bacon, coffee and soup, but it set up bowel complaints before many days in all who fed on the ration, and proved a complete failure. A mixture of that kind might do for a cold climate in an emergency for a few days, but it would never do for a campaign, and it could not be used in a

hot climate without grave results. Beef or mutton must be used if success is looked for. A ration of compressed oatmeal with sufficient mucilage to hold it together; compressed cocoa free from fat, in 4oz. blocks, 6ozs. of compressed beef or mutton mixed with 4ozs. of vegetables so as to form a soup, and 5ozs. of desiccated milk, with  $2\frac{1}{2}$ ozs. of egg powder added, would form the basis of a thoroughly good ration. The quantities given are too liberal, but experience would soon lead to a minimum being reached. The subject is well worthy of experiment and consideration.—*British Trade Journal.*

#### THE PURE BEER BILL.

A BREWER writes:—"Now that Mr. Quilter's originally-named Pure Beer Bill has been withdrawn, may I ask for space in your columns to ventilate my opinion, as a practical brewer, of the harm that would have been done to the British farmer if that Bill had passed into law, and if brewers in general had made up their minds to brew from malt and hops only as defined by the Bill? It is a recognised fact that in all breweries, where sugar is used, it is adopted for the express purpose of being able to use a larger proportion of malt made from British barley, as in the majority of cases it would be impossible to brew bright beers from British malt without the use of a small percentage of sugar, or a large percentage of foreign malt. It has often been remarked to me that Burton brewers use malt and hops only; and to that I answer that a large amount of sugar is sold to Burton brewers, which, I presume, is for use in their manufactories; and I do know that they are obliged to use a far larger proportion of foreign malt for their pale ales than the brewers of other classes of beers. The result of Mr. Quilter's Bill, had it passed (and I believe it was supported by the Agricultural Union), would have been greatly to decrease the use of British barley in brewing, as we should have been forced to use a much larger percentage of foreign barley than we do now, thanks to the assistance of a careful manufacture of good invert sugars."

#### EXCESS WATER IN BUTTER.

JOSEPH INMAN, grocer, Bednall-street, Queen's-road, and of Buckley-street, Oldham-road, was summoned on April 8, at Manchester, before the City Justices, under the Food and Drugs Act, for selling to an Inspector, on March 13, butter containing 21·8 per cent. of water.—Mr. G. Rook, who prosecuted, said this was the first prosecution in Manchester since the hearing of an important case two years ago. There had, however, been many convictions for similar offences in different parts of the country.—Mr. C. Estcourt, the city analyst, said that the sample of butter submitted to his inspection contained nearly 22 per cent. of water. It was not heavily salted, and 15 per cent. of water was an ample allowance in such cases.—The defendant said the butter was in the same condition when sold as it was when he bought it.—A fine of 20s. and costs was imposed.

#### SOUTH HOLLAND AND ADULTERATION.

THE Easter Quarter Sessions for the parts of South Holland were held at the Sessions House, Spalding, on April 9. The Chairman, in charging the Grand Jury, referred to the report of Captain Bicknell, Chief Constable for Lincolnshire, for 1895, in which, he said, attention was rather prominently called to the reports of the public analysts. The analyst for the Holland division told them that out of 81 samples submitted to him for analysis, 20 were found to be adulterated, which was 25 per cent. of the samples analysed. Their analyst pointed out that nowhere in England, except in Nottinghamshire, was the percentage exceeded, and in that county the excess was slight. The admixture of water with spirits was the principal adulteration, and



it was mentioned that some of the samples showed a gain to the seller of 2s. 8d. per gallon by the water which had been illegally added.

#### A SHORT WEIGHT PROSECUTION.

THOMAS LEA, coal merchant, was fined 10s. at Highgate for having two unjust weights. Inspector Bridge believed that no fraud was intended. Probably it was pure carelessness.—Mr. Ricketts, for the defendant, said every precaution was taken to prevent fraud. The actual amount short, he understood, was 1 oz. in a hundredweight of coal, and as that cost a shilling, and there were 1,792 oz. in a hundredweight, the actual gain to the defendant would be the 1,792nd part of a shilling.—Mr. Grover: A nice arithmetical problem.

#### THE GREEN PEA CASE.

It has been definitely arranged to appeal at the South London Sessions against Mr. Fenwick's decision in the coppered peas case. It will be remembered that the hearing of this case occupied several days at Southwark police-court, and resulted in the St. Saviour's Board of Works securing a conviction, with a penalty of 40s. and costs, against Mr. Summers for selling preserved peas containing sulphate of copper. The case was one of great importance to the provision and hotel trades, as the annual consumption of these peas is estimated at 20,000,000 tins in England alone.

#### STRONG STATEMENTS ABOUT MARGARINE.

A MEETING of the Nantwich Farmers' Club was held on Saturday to discuss and take action with reference to Bills before Parliament affecting the interests of agriculturists. The Chairman (Mr. Hocknell) called attention to the Diseases of Animals Bill, which had for its object the compulsory slaughtering of foreign cattle at the port of disembarkation, and said that the Bill would provide against the importation of diseased animals, which in times past had introduced disease into the country. Mr. John Emberton moved a resolution thanking the Government for introducing the Diseases of Animals Bill, and expressing the opinion that such a course of action would provide the only definite protection of the dairy herds of the country from disease affecting imported animals. He said that the attempts which were being made to prove that the Bill was a Protectionist measure were ridiculous, and would only result in hastening the introduction of Protectionist principles. The Government deserved the support of farmers in its efforts to protect the interests of agriculture, and when the day of reckoning came the Government would find they had the sympathy of farmers.—The resolution was passed.—The meeting also discussed the Agricultural Produce Marks Bill and the Prevention of Fraud Bill. Speaking with respect to the latter Bill, Mr. Sadler, the secretary, said the public were hoodwinked by fancy names which were given to rubbish put upon the market. Only last week two farmers, from whom he received the statement first hand, visited a bone works, and in being shown round the premises their attention was attracted by a heap of bones. A quantity of these bones were human bones, which had probably been collected from a recent battle-field. Near this heap of bones was a great tub of fat, which they were informed had been boiled out of the bones. When asked what was done with it, the reply was, "We sell it at £17 per ton, and it can be manufactured into margarine." It was their duty as farmers to enlighten the public in regard to those preparations. The Bills were severally approved, and it was decided to send copies of the resolutions to Lord Salisbury, Mr. Walter Long, Mr. Balfour, and Messrs. H. J. Tollemache and Colonel Cotton-Jodrell, the members for Eddisbury and Wirral Divisions of Cheshire.

#### ADULTERATION IN PADDINGTON.

MR. A. W. STOKES, F.C.S., F.I.C., public analyst for Paddington, in his report for the past year, states that he analysed 363 samples of various kinds of food and drink, with the result that only ten samples of milk, two of groceries, two of butter, and one of spirits were found to be adulterated. The per centage of adulterations to articles analysed was four per cent. Milk retailers, when charged with adulteration, frequently pleaded that the milk they sold was vended precisely as they received it from the country farmers, but analysis of the contents of the milk cans as they reached the railway termini at Paddington showed that not one sample was adulterated. Adulteration of milk varied with different days. Adulterated samples purchased at shops on Sundays averaged 12 per cent., whereas on week-days the average was only 7 per cent.

#### WORKING OVER RANCID BUTTER.

SOME recommend that the butter be kneaded with fresh milk and then with pure water. The rancid taste and odour of butter are due mainly to butyric acid, which is readily soluble in fresh milk and is thus easily removed by this method. Another process is to thoroughly dissolve the butter in hot water, let it cool, and then skim it off and churn it again, adding a little salt and sugar. A small quantity can be tried for an experiment. The water should be only hot enough to melt the butter; if it be too hot, the butter will become oily. The following supplementary processes are given:—

One hundred pounds of the butter are mixed with about 30 gallons of hot water, containing half a pound of sodium bi-carbonate and 15 pounds of fine granular animal charcoal free from dust, and the mixture churned together for half an hour or so. The butter is then separated; after standing, it is warmed, and strained through a linen cloth, then resalted, coloured and worked up with one half its weight of fresh butter.

2. Use one pint of water in which have been dissolved 20 grains of chloride of lime, to each pound of butter; wash well the butter in the solution, afterwards re-washing it in cold water, and salt.

3. Melt the butter over a moderate fire and add to every ten pounds of butter 5½ ounces of fresh pulverised wood charcoal, ½ ounce pulverized chalk, one tablespoonful of honey, and a few carrots cut up in pieces. Keep this mixture in a melted state for one half-hour, constantly stirring it and removing the scum. Then pour the liquid butter through a fine strainer. It is claimed that butter treated with this process is, when cold, inodorous and has an agreeable taste. The charcoal absorbs the badly smelling gases, the chalk neutralises the acid which may be present, the honey improves the taste, and the carrots impart a yellow colour to the butter. When the butter is cold take it from the vessel and cut off the sediment on the bottom, sprinkle with fresh water and keep it in a cool place. It is recommended to place the vessel containing the butter in another filled with fresh water, or, what is still better, place it in a trough through which runs a current of fresh water.

Here are two methods recommended for preserving butter:—

Dissolve 1 part of sodium metaphosphate in water and mix it intimately with 240 parts of butter.

2. Cover the butter with a layer of metallic (iron) sponge and water, so that the air can only reach the butter by passing through it.—*Pharm. Era.*

#### MUSTARD.

At Liverpool, on April 1, Michael O'Brien, 27, Park-street, was fined 5s. and costs for selling mustard adulterated by the addition of 20 per cent. of wheat flour.



## THE SALE OF FOOD AND DRUGS ACT IN LEEDS.

MR. T. FAIRLEY, public analyst, reports on analyses made for the city of Leeds during the quarter ending March 31st, 1896.

The samples received have been :—

|                      |    |
|----------------------|----|
| Milk ... ..          | 66 |
| Skim Milk ... ..     | 2  |
| Butter ... ..        | 4  |
| Margarine ... ..     | 5  |
| Lard ... ..          | 1  |
| French Beans ... ..  | 1  |
| Raspberry Jam ... .. | 1  |
| Cheese ... ..        | 1  |

Total 81

Two of the samples of milk were adulterated with 16 and 10 per cent. of water, respectively, as compared with the lowest quality of natural milk, and 22 were reported as of low quality.

As I have pointed out in previous reports, there is little doubt that these milks of low quality are adulterated with from 10 to 15 per cent. of water, but owing to the low standard adopted at Somerset House they have to be passed, to the serious loss of the public. The sample of beans was adulterated with copper equal to one grain of copper sulphate per pound.

## REPORT ON A PRELIMINARY INVESTIGATION OF SOME TINNED EXTRACTS OF MEAT FOR THE PRESENCE OF LEAD.

By WILLIAM MURRELL, M.D., F.R.C.P.,

Lecturer on Pharmacology and Therapeutics at the Westminster Hospital.

SOME months ago a well-known physician informed me that he was suffering from lead poisoning as the result of over-indulgence in a popular meat extract put up in tins. His account was that having to lecture to a large class of students he experienced the necessity for taking some easily digestible sustenance, and being averse to the use of alcoholic stimulants, he took daily for some months either during or immediately after his lecture a spoonful of a certain meat essence which he obtained in tins.

After a time he noticed a difficulty in writing, and found that the effort of transcribing even a single page of manuscript was a source of inconvenience. This rapidly increased, so that at the expiration of a few months it was with the greatest difficulty that he could write even an ordinary letter. Thinking that in all probability he was simply run down, he decided to try what change of air would do, and retired to his country house.

One morning whilst shaving in the bright sunlight, he happened to look at his gums, and discovered the characteristic blue line of lead. He at once placed himself under treatment, and all other sources of the ingestion of the lead having apparently been eliminated, he came to the conclusion that the tinned meat was the cause of his trouble.

He asked me to look into the matter, and to test not only the particular preparation he had employed, but other tinned foods, for the presence of lead. He placed at my disposal a tin of the extract he had been in the habit of using, but this it was determined not to touch until certain other investigations had been made. As a preliminary step I obtained from a retail chemist specimens of all the tinned meat essences and extracts he had in stock. He was not able to tell me with any approach to certainty when they were obtained from the various wholesale houses, but he volunteered the statement that, as the sale was pretty brisk, they probably had not been kept long.

Feeling the necessity for absolute accuracy in a matter of such delicacy, I obtained the co-operation of

my colleague, Dr. Wilson Hake, Lecturer on Practical Chemistry at the Westminster Hospital, by whom the following examinations were made :—

No. 1.—The first specimen examined—the names of the makers are purposely omitted—was in a tin cylinder measuring  $1\frac{1}{8}$  by 2 inches and fitted with a soldered lid with a key for opening it. It contained 84 grammes of light-coloured mobile jelly. Lead was present in the solder, but none could be detected in the preparation itself and none in the washings with hot water from the interior of the tin.

No. 2.—The second preparation was contained in a tin measuring  $1\frac{3}{4}$  by 2 inches, and soldered round the middle. It weighed 113 grammes, and was a gelatinous and rather stiff material. Lead was detected in the solder, but none in the preparation itself and none in the washings from the tin with hot water.

No. 3.—This was in a tin cylinder with soldered lid and key, and consisted of 100 grammes of gelatinous material. Lead was again detected in the solder, but not in the preparation, which was slightly acid.

In all these testings a considerable quantity of material was employed—from 10 to 50 grammes—in each case, and various tests were employed. In none of these specimens could any reaction be obtained with sulphuretted hydrogen by direct treatment, by partial incineration and extraction with nitric acid, or by complete incineration exhaustion with nitric acid nearly neutralising and adding sodium acetate.

As a control experiment, lead was added to No. 1 and No. 2 in the form of the acetate in solution in the proportion of one part of lead to 10,000. The preparations when tested gave the usual reactions.

In the next experiment a portion of No. 1, after decomposition had set in, was left for twenty-four hours in contact with a strip of metallic lead, but on examination it failed to yield any reaction.

Dr. Wilson Hake then instituted a series of experiments with the view of estimating the delicacy of the different tests for lead employed, and arrived at the following results :—

| Reagent.                            | Percentage of Lead. |                  |                     |                |
|-------------------------------------|---------------------|------------------|---------------------|----------------|
|                                     | 1 in 1,000          | 1 in 10,000      | 1 in 100,000        | 1 in 1,000,000 |
| H <sub>2</sub> SO ...               | Copious ppt.        | Distinct ppt.    | Nil                 | Nil            |
| H <sub>2</sub> S ...                | "                   | Deep colouration | Visible colouration | Just visible   |
| K <sub>2</sub> CrO <sub>4</sub> ... | "                   | Copious ppt.     | Visible ppt.        | Turbidity      |
| K. I ...                            | "                   | "                | Nil                 | Nil            |

The delicacy of the reactions was much affected by nitric acid, less by acetic acid, and least of all when the preparation was neutral.

The final examination consisted of the investigation of the special tin obtained two years previously direct from the makers by the physician to whom reference has been made, and this was subjected to a most careful analysis. The contents of the tin weighed 150 grammes, of which 100 grammes were used. The composition of the preparation was—water, about 90 per cent.; meat extract, 10 per cent.; ash 1.3 per cent. After a rigorous search conducted by the light of the experience gained in the former investigation, the preparation was found to be free from lead.

*British Medical Journal.*

## PRESERVATIVES IN MILK.

A REPORT, which is deserving of serious consideration, has been made by Dr. M. K. Robinson, Medical Officer of Health for the East Kent district, on the subject of milk preservatives. Dr. Robinson was requested to investigate a sudden serious outbreak of illness in a religious house containing five sisters, with cook and



housemaid. Although no fatal results had accrued, the symptoms were severe and convalescence protracted. Five out of the seven inmates were attacked within a short period of each other, thus indicating some common origin as the source of the mischief. Suspicion was attached to the milk supplied to the household, which had been taken alone, blended with tea and in the form of blancmange. To the morning and afternoon supply the cook had added a preservative, which was found to contain as its basis boracic acid. A sample as delivered by the dairyman was analysed and found also to contain a similar substance. Thus, for the same purpose, a preservative had been added both before and after its arrival at the house, by which treatment an overdose had been unintentionally administered. Permission was obtained to give the portion of unconsumed blancmange to nine fowls. Five devoured the food with avidity, and thus secured a larger portion than the remaining four, and, though vigorous pullets, they all died. The remaining four suffered badly, but ultimately recovered. Dr. Robinson urges that the presence of the drug should be recognised as an injurious adulteration. If such results, he says, can be produced in the case of adults, it is not unreasonable to presume that infants cannot take with impunity long continued doses in their staple food.

### DRUGS.

At Sittingbourne, on April 6, William George Saffrey, chemist, of Sheerness, was fined £1, including costs, for selling spirit of nitrous ether which was proved on analysis to be deficient of its active property to the extent of 44 per cent.

### MILK.

At Harlesden, last week, Henry Ellis, York Dairy, Twyford-terrace, Stonebridge, was summoned by Inspector Watts for having sold an article as milk which, on analysis, was found to contain 28 parts of added water. Defendant pleaded that on the Sunday morning when the purchase was made by the inspector he was short of milk and purchased some to make up from a boy in the street. Fined 40s. and costs.

At Widnes, on April 10, Joseph Clare, milk dealer, 82, Albert-road, was summoned for selling milk not of the quality demanded by the purchaser. Police-sergeant Bennett deposed to purchasing for twopence a pint of milk from one of the defendant's men, who was in charge of a milk-cart in Victoria-road. The county analyst's certificate stated that the milk contained 2.10 per cent. of fat and 8.72 per cent. of other solids, and had been deprived of upwards of one-fourth of its cream. In reply to Mr. J. W. Knowles, who defended, Sergeant Bennett said that he took a sample the same morning from another of the defendant's carts, and this was found to be all right. For the defence, Mr. Knowles urged that the milk in question was taken from the bottom of the tankard, which was nearly empty, and it was well known that the milk at the bottom would not contain as much cream as that at the top. The fact that the other sample taken from a tankard nearly full was found to be all right should tell in favour of the defendant. The bench imposed a fine of 20s. and costs—£1 1s. 8d.

At Cork, on April 10, Mr. Callaghan M'Carthy, farmer, Killeens, was prosecuted under the Food and Drugs Act for selling milk deficient in fat to the extent of 20 per cent.—Sergeant Kenny having deposed to the purchase of the milk, evidence was called for the defendant to show that the milk had been in no way tampered with, and had been delivered identically the same as it had come from the cow.—James Kennedy, farmer, Arderow, was prosecuted on a like charge. He was defended by Dr. Dunlea, solicitor, who pleaded guilty, but urged in mitigation that on the day in question his client's cows had run dry, and in order to supply his customers he had to purchase the milk from another man.—The Bench fined each of the defendants £2 and 10s. costs.

At Arundel, on April 13, Charles Smith, dairyman, of Lyminster, was summoned for selling milk adulterated with eight per cent. of water.—P.C. Neale deposed that on March 10th he saw defendant's son (who now appeared for him) retailing milk in Maltravers-street. He asked him for a pint, and the man said he was afraid he could not let him have any that morning, as his supply was rather short. Witness told him he wanted it for the purpose of analysis, and then he was supplied with a pint for 2d.—Superintendent Kennett, Inspector of Weights and Measures, stated that he received a certificate from the public analyst, which showed that the sample was one of milk of 92 parts and water eight parts.—Defendant's son, in defence, said he measured the milk up that morning, and as there was not sufficient for the orders received they had eight gallons of milk from three other dairies, as they had been in the habit of doing.—There was a previous conviction against the defendant for a similar offence in January, 1892.—The Bench fined the defendant £1 and 10s. costs.

At Hull, on April 9, Agnes Atkinson, 60, Wassand-street, was summoned for selling a pint of milk adulterated with 15 per cent. of added water.—Inspector Baldock made the purchase at defendant's shop on the 5th ult., and submitted the milk to Mr. Baynes, the Borough Analyst, who certified that it was adulterated with 15 per cent. of added water.—The defendant said that she sold the milk as she received it.—Inspector Baldock said that when he learned that the milk was adulterated he informed the defendant, and asked her not to tell the milkman, so that he might take a sample from him. She, however, did so.—His Worship said it was a serious matter, and the public must be protected. There would be a fine of 40s. and costs.

At the Bristol court, on April 8, John Warren, was summoned under the Food and Drugs Act for selling milk adulterated with added water to the extent of 6 per cent. Sergeant Beer stated that on March 16 he was in St. Luke's-road, when he saw a girl, named Florence Warren, with two cans of milk, supplying the people in the neighbourhood. He took a sample from each can, which he submitted to the public analyst, who certified them to be adulterated with 6 per cent. of added water. The same day he was in Monmouth-street, Totterdown, where he saw John Warren with a large milk churn on a pair of trucks, from which he was supplying people from door to door. He bought a sample of the milk, which he submitted to the public analyst at the same time as the other, and it was found to be adulterated to the same extent. The wife of the defendant, who appeared in consequence of the illness of her husband, stated that the milk was sold as it was received from the farmer. As it was the first offence, the Bench inflicted a fine of 40s. and costs.

On April 10, a Peckham dairyman was summoned at the Lambeth Police-court by Inspector Nagle, on behalf of the Camberwell Vestry, for selling separated milk containing six per cent. of added water.—The defendant disputed the correctness of the analysis, and said he had milked cows which had given half water—Dutch cows. (Laughter.)—Mr. Denman: You never milked a cow that gave six per cent. of added water. (Renewed laughter.)—Eventually the case was adjourned in order that the defendant might have an independent analysis made.

### GOOD WORK IN GLASGOW.

At Glasgow on April 13, before Sheriff Fyfe, Robert Stevenson pleaded guilty of having, on 12th March, in his shop at 42, Old Kelvinhaugh-road, sold to Inspector Hamilton, a pennyworth of sweet milk which, on analysis, was found to be deficient in natural fat to the extent of 12 per cent. He said he sold the milk as he received it.

Mr. John Lindsay, assistant clerk of police, who prosecuted, said that the sanitary authorities had reason to believe that Mr. Stevenson's story was true, and since the date of this offence samples had been taken from the farmer, and these were being analysed. Still, the respondent had undoubtedly committed the technical offence of selling adulterated milk, and he should have protected himself by getting a warranty. Mr. Lindsay said that, in the circumstances, he would be quite satisfied if his Lordship restricted the fine to an amount that would cover the outlay by the prosecution, which amounted to £1 9s. 10d.

The Sheriff ordered Stevenson to pay £1 10s.

The St. George's Co-operative Society, Limited, were charged with having, on March 12, in their shop at 131, Kent-road, sold to Inspector Hamilton a pennyworth of sweet milk, which was found to be deficient in natural fat to the extent of 10 per cent. The respondent pleaded not guilty, and was defended by Mr. William Borland, writer. Evidence was given by Inspectors Hamilton and Armstrong as to the purchase of the milk, and Dr. John Clarke, one of the city analysts, gave evidence as to its quality. In cross-examination Dr. Clarke stated that there was no standard for milk prescribed by the Act, but that the third sample taken by the inspectors might, according to the Act, be sent to Somerset House for analysis. From the passing of the Food and Drugs Act in 1878 until a few years ago the minimum quantity of fat in milk should be, according to the Somerset House analysts, 2.5 per cent., but in 1893 the minimum was raised to 2.75. The quantity of fat in the milk purchased in this case was 2.48 per cent. The lowest quantity of fat ever found in the milk of a single cow was 2 per cent. The milk labelled was taken at 11.15 a.m. from a can which had been filled at 7.30 that morning with eight gallons.

The Sheriff said that the only evidence which was before him showed that this milk was deficient in fat. At the same time he did not think that this was by any means a case which suggested that there was any deliberate manipulation of the milk so as to reduce its quality. He therefore limited the penalty to £2.

### LAMBETH BOARD OF GUARDIANS AND THE MILK CONTRACTORS' EXPLANATION.

With reference to the milk contract, a letter was read from Messrs. Freeth and Pocock respecting the unfavourable analysis of their milk supplied to Prince's-road Workhouse on March 30. They stated that they could prove that the milk was delivered exactly as received by them from the farmer, and could only suggest that the milk might have been allowed to stand, and a portion tipped from one churn to another, for the purpose of correct measurement, without first stirring the milk. They employed an inspector's whole time to test their milk, and constantly sent samples to Dr. Muter, some of whose certificates they submitted. They desired and intended to carry out the contract to the very letter.



## EDINBORO' MILK.

A CORRESPONDENT says:—"In a report of the paper read by Dr. H. Stewart before the Royal Society at their recent meeting, the following statement occurs:—

"Cowhouses in this country were not kept with that careful and punctilious cleanliness with which they were kept in Holland and Denmark. The animals were not groomed, the cowsheds were not flushed with water so often as they ought to be, the hands and clothing of the milkers were not properly attended to, nor were the teats of the udder cleaned."

"In justice to a much-maligned class, the dairymen of the city, will you permit me to make one or two remarks on these statements? I have a fairly wide and intimate knowledge of both city and country byres, and I am bound to say my experience differs entirely from that of Dr. Stewart. In my own byre the cows are groomed with comb and brush regularly, and the byre is flushed with water from end to end three times a day every day in the week. I know that this is the rule in all respectable city byres. The milkers invariably wash their hands and clean the teats before they begin to milk; and unless our medical friends want them to dress in their Sunday best before they sit down to milk, I don't know that their clothing can be much improved."

"The stigma attaches, however, not alone to the dairymen of the city. For some years past we have been subject to the daily supervision of Sir H. Littlejohn and his staff of assistants and inspectors. If the state of matters is as above, what are we to say about the way in which these gentlemen are discharging their duties?"

"As to the number of bacteria found in the milk, I am not in a position either to confirm or to contradict the figures given; but, in the interests of the public, it would be well to know exactly how the milk was obtained and treated. The town milk is said to contain, on the average, about nine times the number of bacteria found in the same quantity of milk from the country. But country milk has to run the gauntlet of the streets and shops before it is consumed, just as town milk has. Does the statement mean that milk taken in a city byre contains so many more bacteria than milk taken in a country byre? Are the latter so very much more cleanly than the former? I question this."

"Will the observers also inform us what percentage of the bacteria is detrimental to human health? I understand that their presence is due to contact of the milk with dust-laden air. Does the blame for this lie more at the door of the dairymen than at that of our Town Council, who are too busy laying restrictions on a perfectly legitimate and well-conducted trade to put a stop to the pollution of the atmosphere by such means as the municipal dust-cart, the refuse destructor, and the daily nuisance of open-air carpet-beating."

## MEAT.

On April 11, at the Clerkenwell Police-court, John Abrahams, a meat salesman, of 122, E Avenue, Central Meat-market, Smithfield, was summoned at the instance of the Holborn District Board of Works, that he was the owner of meat which was unsound, and which was intended for the food of man. Mr. Matthew Hale, solicitor and clerk to the Holborn District Board of Works, appeared on behalf of the prosecution, and the evidence of the witnesses showed that on Thursday, the 20th February, Mr. Billings, the sanitary officer, when on duty outside the Central Meat Market, Smithfield, noticed some carcasses of beef being carried from the market to the premises, 109, Charterhouse-street, West Smithfield, and, from the appearances of it, he followed the meat into the shop, and on examining it, found that it was diseased, and that there was evidence of much tuberculous disease about it. He seized the meat, and it was taken to the police-court, where, after being inspected by the Magistrate, he gave an order condemning it. Dr. William Arthur Bond, the Medical Officer of Health, stated that he inspected the meat, and found it very unsound. On behalf of the defendant, it was urged that the business in the Central Market belonged to defendant's brother, who died some three months ago, and since then defendant, on behalf of the widow, had managed the business. On this day he was not at the Central Market, but at Deptford Market, where he had another business, therefore did not see the meat that was sold by his salesman, and consequently had no knowledge that it was unsound. The salesman did not consider it was unsound, or he would not have sold it, and he gave evidence to this effect. Mr. Horace Smith considered that the case had been made out, and fined the defendant £10 and 2s. costs.

At Clerkenwell, on April 11, William Dean, of Thorpe St. Peter, Lincolnshire, was summoned by Sanitary Inspector Billing, of the Holborn Board of Works, for depositing at 109, Charterhouse-street, two carcasses of mutton, intended for human consumption, which were diseased and unfit for food. Mr. Matthew Hale prosecuted. Dr. Bond, medical officer for health, said the carcasses were those of sheep which had died from puerperal fever. It was stated by a local police-inspector that the defendant was a dealer in dead animals only. Defendant said he had sent the meat up as cats'-meat. Mr. Horace Smith said it was a monstrous case. Defendant was trying to get a high price for bad meat, and to poison London with his stuff. He would be fined £40, or go to prison for six weeks with hard labour.

At Workson, on April 8, Henry Helliwell, of Harry Croft Farm, near Workson, was charged with exposing for sale in the Workson Cattle Market on March 18 the carcass of a sheep which was totally unfit for food. Mr. John Appleton, clerk of the Urban District Council of Workson, prosecuted on behalf of that body.—Henry Simpson, inspector of nuisances, said that he found the carcass of a

sheep hanging in the shed in the cattle market, which was dark in colour, clammy, and stank. With the medical officer he took the carcass before a magistrate, who ordered it to be destroyed.—John Housley, medical officer for the Workson Council, bore out this, and said that putrefaction had begun, and the carcass was totally unfit for food.—The defendant admitted that he had sent the carcass to Workson after the animal was killed, in the same manner as he and others did to Sheffield. He supposed that when it reached Workson it would be seen by the inspector, and if he passed it the carcass was to be sold. This was how it was done at Sheffield, where, if a carcass was not fit, it was taken possession of, and there was an end of it.—The Bench found that the carcass had been exposed for sale, and considered that the defendant had been misled.—Fined 20s. and costs.

## ADULTERATION IN ESSEX.

The County Analyst reported:—"Butter and milk remain the only articles which show adulteration, and these are, on the average, considerably better than they used to be. The butters reported against were either entirely margarine or mixtures containing very large proportions of the last-named ingredient. Four of the adulterated milks were diluted with various proportions of water ranging from 6 to 20 per cent., and the other two had had a portion of their cream abstracted."

## MARGARINE.

## CONFLICTING EVIDENCE.

At St. Helens, on April 10, Messrs. Blair and Co., provision dealers, 33, Watery-lane, Sutton, were summoned for selling to Constable Kerrigan 1lb. of butter which contained, according to Dr. Robertson's analysis, 65 parts in every 100 parts other than butter fat. The Town Clerk prosecuted. Mr. H. L. Riley defended. Kerrigan stated that he visited the defendant's shop on March 17, and was supplied by Thomas Leonard, the assistant, with 1lb. of butter from a large lump marked "good quality," and for which he paid 1s. Leonard was giving him the butter from one lump, but he insisted on having it from another larger lump. After it had been analysed he called and told the assistant that it had turned out bad, upon which Leonard said, "You got no butter; you got margarine."—Dr. Robertson, the borough analyst, said, in answer to Mr. Riley, that for margarine it was a fairly good specimen.—Mr. Riley had given notice to the Chief Constable to produce the paper in which the "butter" was wrapped, but the Chief Constable said that it had been destroyed.—Mr. Riley produced a paper on which the word "margarine" was printed in large letters, and asked Kerrigan if that was a similar paper. Kerrigan said "No." If it had been he would have seen the picture upon the paper.—The magistrates present (the Mayor and Messrs. Tyrer, Dromgoole, and T. Glover) consulted, and then the Mayor said that the bench was divided in opinion. There could be no conviction, and the case must, therefore, be dismissed.

At West Ham, on April 8, Daniel Jones, a grocer, of 8, Prince Regent's-lane, Plaistow, was summoned for selling as butter a substance which, on analysis, proved to be not butter but margarine.—Dr. Sanders, the medical officer of health for West Ham, said that a sample was bought at defendant's shop on February 27, and, on being analysed, it was found not to be genuine. It contained only traces of the fatty constituents of real butter, being, in fact, the substance known to commerce as margarine.—Defendant did not appear, and Mr. Baggallay imposed a fine of 40s. and costs.

## SPIRITS.

At Wakefield, on April 10, Timothy Fozzard, landlord of the White Horse Inn, Lee Fair, West Ardsley, was ordered to pay £3 12s. 6d. for selling gin and rum which contained 5 per cent. excess of water.

## COFFEE-SHOP "COFFEE."

CHARLOTTE LOVELL, a coffee-house keeper, of Nunhead-green, was summoned at Lambeth, on April 10, by the Camberwell Vestry for selling, to the prejudice of the purchaser, an infusion of a mixture of 70 per cent. of chicory and 30 per cent. of coffee.—Mr. Beck, who defended, remarked that people who bought coffee at a halfpenny a cup could not expect to get pure coffee, for which his worship or himself would have to pay fourpence at their clubs.—Mr. Denman replied that there was no reason why tradesmen should delude poor people by leading them to suppose they were selling an article at an impossible price.—Defendant was fined 10s. and costs.—Joseph Richardson, a coffee-shop keeper, of Evelina-road, was fined 20s. and costs on a similar summons. He said that his customers as a rule did not like coffee alone; they said it was weak.

## WHISKY.

At Littledean Petty Sessions on April 10, George Clements, landlord of the Victoria alehouse, Cinderford, was summoned for selling adulterated whisky, on March 9 last. P.S. Griffin, of Coleford, purchased a pint of whisky from the defendant's wife on the day named for 2s. 4d., and the county analyst's report showed that the liquor was 49.6 degrees under proof. Fined £5 and £14s. 2d. costs.



## LINSEED MEAL APPEAL.

THIS was an appeal from the decision of the magistrates, who fined the appellant £3 and costs, or in default a month's imprisonment, in an action brought under the 6th section of the Sale of Food and Drugs Act, with reference to the sale of what is known as linseed cake meal, and heard at the Belfast Recorder's Court, on April 8.—Mr. M'Grath (instructed by Mr. D. F. Spiller) represented the respondent, and Mr. Baxter (instructed by Mr. W. M'Illdowie) the appellant.—Mr. M'Grath, in opening the case, stated that the meal in question had been sold to Mr. M'Master, inspector under the Food and Drugs Act, and when submitted for analysis Dr. Hodges found it was adulterated to the extent of 30 per cent. with *farinaceus* matter. With reference to the defence, he (Mr. M'Grath) understood that it would be that the substance in respect of which the prosecution was brought did not come within the terms of the Food and Drugs Act, and that the article was not a drug.—Mr. M'Master gave evidence as to the purchase of the meal on January 28 last.—Drs. Hodges and Torrens and Mr. Elliott were then called and examined with reference to the substance known as linseed cake meal.—Mr. Baxter said that the main line of his defence was, as had already been stated, that linseed meal and linseed cake meal were different substances. Linseed meal practically could not be procured in an absolutely pure condition, and linseed cake meal was not a drug within the meaning of the Food and Drugs Act.—Mr. Bright, an assistant in Mr. May's shop, stated that he was asked for linseed cake meal, and he sold that on the occasion referred to.—Sir James Haslett and Mr. Samuel Kennedy were also examined as to the possibility or otherwise of anyone obtaining linseed cake meal in an absolutely pure condition.—His Honour, in delivering his decision, stated that linseed meal appeared to be used for two purposes—feeding cattle and for human purposes. So far as it was used for the feeding of cattle the 56th and 57th Victoria protected the purchaser, because it provided that an invoice should be given. No such invoice was given upon the sale of that article; therefore he must assume that it was not sold for cattle. If he did not do so the seller had been guilty of an offence under the 56th and 57th Vict. That it was used by doctors and in hospitals was plain. It was used in medical science, and, having been sold in this small quantity, he must assume that it was not sold for cattle. It appeared that the article had been very much used in medicine, but that the faculty were giving it up in consequence of its adulteration. That prosecution was with the object of putting an end to that. It had nothing to do with the selling of the linseed cake for the purposes of cattle feeding. He had nothing to do with that question. It was not to be understood that he expressed any opinion in reference to a sale for purposes of that kind, or to suggest that the article might not be sold, subject to the provisions of 56 and 57 Vict., in the way provided for the protection of purchases by that Act. Sir James Haslett had given his evidence very clearly. He had said that he could not regard the sale with 30 per cent. of foreign matter as a sale of linseed cake meal. He would not regard it as a sale of that article at all. The prosecution was for selling linseed cake meal as such, and the opinion of the satisfactory witness produced by the defendant was that it was not the article for which it was sold. Could anyone have a doubt when it was used for human purposes that it was a drug? It appeared to him (his Honour) that the magistrates had acted properly in convicting in that particular case. That case decided nothing, except that the article sold in that particular transaction was not what it professed to be—namely, linseed cake meal. It was not that according to Sir James Haslett, and it was not that, having 30 per cent. of foreign matter in it. Upon that ground he (his Honour) would confirm the decision of the magistrates, with costs.

## LOW FINES IN IRELAND.

AT Abbeylax (Queen's County) Petty Sessions, on April 11th Colonel Poe presiding, Acting-sergeant Forbes, inspector of food and drugs, prosecuted John Mulhall, Spink, for selling half-a-pint of whisky on 20th March which was adulterated with water 29.5 degrees under proof, as shown by the certificate of Sir Charles Cameron, public analyst. Defendant pleaded guilty and was fined £1 and costs.—John Pigott was prosecuted by same complainant for selling to the prejudice of the consignee, or contractor, at Spink Creamery, new milk which the analyst's certificate showed was adulterated with 46 per cent. of water. Defendant's son was sworn, and denied that any water had been added to the milk before delivery, but the magistrates were unanimous in convicting the defendant, and fined him 18s. and 3s. costs.—Mary Foyle, of Knock, was also fined 10s. and costs for selling new milk at the same time and place which was adulterated with 18 per cent. of water. Defendant admitted the water was in the milk, but alleged it got into the churn by its being left out in the yard during a wet night.

## THE VINEGAR APPEAL.

AT Staffordshire Quarter Sessions, on April 8th, before Mr. N. C. A. Neville and other magistrates, Messrs. Boots and Co., Limited, cash chemists, and Frederick W. Whitwell, manager at their Burslem branch, were the appellants, and Mr. E. W. H. Knight, inspector for North Staffordshire under the Food and Drugs Act, was the respondent.—Mr. Stanger, Q.C., and Mr. Plumtre, instructed by Messrs. Wells and Hind, Nottingham, were for the appellants, and Mr. Boddam, instructed by Messrs. Hand and Co., Stafford, represented the respondent.—The appeal was against a conviction and a fine of £10 and costs on Messrs. Boots, and a conviction with a fine of £5 and costs against Whitwell for supplying dilute acetic acid

when asked for white wine vinegar.—Mr. Stanger at the outset said that they had agreed to a course which he thought would meet the approval of the Court, and which in that event would save them a long and difficult inquiry. There were two appeals, one by the company and another by Whitwell, the offences alleged against them being the sale by Whitwell of a quantity of dilute acetic acid when the Inspector asked to be served with white wine vinegar. Mr. Stanger went on to say that they admitted the sale, but it was against the special printed instructions sent out to all of the company's establishments. It was sold, however, at the price of dilute acetic acid and not at the price of white wine vinegar, so that in effect it was not suggested at any time that there was any fraud on the part of Messrs. Boots. But Messrs. Boots felt that the infliction of such a heavy penalty was an imputation upon them, and it was for the purpose of exonerating the company that these appeals were brought. The course suggested was that the conviction should stand, but that the penalty of £10 should be reduced to £5, and the penalty of £5 should be reduced to 40s. The company would pay the costs of the appeal. In suggesting this they admitted that there had been an offence against the Act, and that the master was responsible for the acts of his servants.—Mr. Boddam concurred with this arrangement, and added that there was never any desire on the part of the prosecution to impute dishonest motives and fraud to the company.—The Court agreed to the arrangement, and the penalties were modified accordingly.—Mr. Stanger: And the Court accepts the statement made by me and assented to by my learned friend that there is no imputation upon the commercial honesty of the company?—The Chairman: Oh, quite so.—Mr. Stanger: I am obliged. It was our great object to establish that.

## AGED HORSES AS HUMAN FOOD.

AT the Thames Police-court on April 11, William Almond, 22, was charged with cruelty to a horse.—Inspector William Rogers, of the Royal Society for the Prevention of Cruelty to Animals, stated that at about 9 o'clock on Friday night, while on duty in Naval-row, Poplar, he saw defendant leading two horses towards the docks. One of the animals—a black gelding—was very lame on the off fore-leg through a diseased limb. There was a poultice on the foot. The animal had been badly shod with a bar shoe. It was an aged horse. He asked defendant how far he had come, and Almond replied, "A man asked me to lead it from Barbican to the Docks, to be shipped for Rotterdam." It being, in witness's opinion, an act of cruelty to lead the animal when in such a condition, he gave defendant into custody. Inspector Clarke, of the Royal Society, first drew his attention to the case, but he had been so seriously assaulted by a number of men that he was unable to be present.—Mr. F. W. Kendall, veterinary surgeon, corroborated the inspector's evidence.—Mr. Mead: Where were the horses going?—Mr. Kendall: To Rotterdam.—Mr. Mead: For what purpose?—Mr. Kendall: To be slaughtered for human food, I believe. The commercial value of the horse in question over there would be £7 or £8; but here it would only be worth about 35s.—Defendant called Alexander Macdonald, a general dealer, of 81, Stephenson-street, Canning-town, who, in reply to the magistrate, said he bought three horses. One was too lame to walk, but he thought the other two were capable of walking to the pier. He engaged defendant to lead the horses, and paid him 1s. 6d. for each horse. He bought them at Rymill's Repository, and was going to send them to Rotterdam.—The inspector, re-called, said he had been engaged in similar prosecutions, and, by direction of the society, was engaged on special duty with regard to these cases.—Mr. Mead fined defendant 10s. or seven days.—Inspector Rogers then applied for a summons against Macdonald, which was granted and made returnable at once.—The case having been proved, Mr. Kendall, in reply to Mr. Mead, said the horses were very roughly packed on board, and it was cheaper to send them living than dead.—Mr. Mead said that if these cases of gross cruelty continued the magistrates at that court would have to consider whether persons charged should not be sent to prison without the option of a fine, but as that course had not hitherto been adopted he would not initiate the treatment. Defendant would be fined £4 and £1 4s. 6d. costs, or one month's hard labour.

## THE COUNTY OF DURHAM VACANT INSPECTORSHIP.

OUT of 116 candidates the Durham County Council have appointed Mr. John Jeckell to the vacant Inspectorship of Weights and Measures and Food and Drugs. Mr. Jeckell has been five years in the Durham Weights and Measures Office as clerk, and gave such thorough evidences of capacity and fitness for the vacancy that testimonials were given him by Mr. Ralph Simey, Clerk to the County Council, and by Mr. B. Scott-Elder, Chief Inspector. His appointment is, therefore, a good example, showing that local authorities need not go away for officials when good men deserving promotion are in their own employ.

## ANSWERS TO CORRESPONDENTS.

"STAR" POTATO.—The *Star* is the victim of a stupid hoax. No potato was ever grown by J. B. Swan, of Loveland, in Colorado, or by anyone else 28in. long, 14in. in diameter, and weighing 86 lbs. 10 ozs., which is equivalent to the weight of one and a-half bushels of ordinary potatoes. The photograph which hoaxed the *Star* was a combination one, hence the reason why the potato appeared in the illustration to be nearly as big as the man. We should not have thought so simple a fake could take the *Star* in.



## FOOD PRESERVATIVES.

By R. T. THOMPSON, F.I.C.

(Continued from page 179.)

**Fluoride of Sodium.**—This substance, as well as hydrofluoric acid and other fluorides, has been proposed as an antiseptic, and is said to be employed sometimes as a preservative for milk. In the latter respect, as will be observed from Table II., it is by no means of great value, and is only equal to carbolic and cresylic acids. As a preventive of alcoholic fermentation, however, the action of fluoride of sodium, when present in the sugar solution to the extent of 35 grains per gallon, is extremely pronounced, as practically no alcohol was produced, and the yeast was rendered inactive. Of recent years fluorides and hydrofluoric acid have been used in some breweries to stop the action of certain objectionable varieties of ferments often present in yeast, and it has been claimed, and it is possibly the case, that a somewhat higher yield of alcohol is obtained when the proper proportion of one of these compounds is added to the worts. This fact would at first sight appear to be contrary to the result of the trial given in Table III., but it has been observed in other cases that an antiseptic in comparatively small proportion may not effect, or may even assist, alcoholic fermentation, while in larger quantity it may altogether suppress it. This example of fluoride of sodium shows clearly that an antiseptic may be perfectly effective in certain circumstances, and comparatively or even quite ineffective in others, thus showing the necessity of carefully defining the substance which it is capable of preserving, as well as the proportion required. Fluoride of sodium does not appear to be poisonous, but its effect on the process of digestion does not seem to have been studied.

**Borax.**—This well-known salt is manufactured on a large scale, and is certainly of value as an antiseptic in many ways. The result of the trials with this salt on the preservation of milk shows that it is a comparatively feeble antiseptic, and ranks with carbolic and cresylic acids and fluoride of sodium. This order, however, is entirely upset as regards its effect on the alcoholic fermentation of sugar solutions, which it actually favours to a small but decided extent.

**Boric or Boracic Acid.**—This is probably the most widely used of all preservatives, and has been used mixed with various substances, although the real antiseptic ingredient of all these is undoubtedly the boric acid. From the results in Table II. it will be gathered that boric acid is considerably more powerful as an antiseptic for milk than an equal weight of borax, but it must be borne in mind that the latter is a much cheaper article than the former, and as it also contains a much larger quantity of water of crystallisation, borax could scarcely be expected to be so effective as boric acid. A mixture of these two substances is usually employed for milk preservation, and indeed preservative powders, such as "glacialine," are sold, which consist of a mixture of boric acid and borax. This use of the two ingredients does not seem to be a matter of haphazard, but was probably the result of observation unaided by chemical analysis. That this is in reality the case is evident when we consider the results in Table II., in which it is shown that boric acid is superior to borax, while in Table I. it will be noticed that a mixture of boric acid and borax is decidedly superior as a milk antiseptic to boric acid alone. Taking everything into consideration, this mixture is undoubtedly as good a preservative (when regarded in that light alone) for milk as could be obtained until recently. As regards the effect of boric acid on alcoholic fermentation it will be seen from Table III. that in this proportion it has little, if any, action, but, if anything, it retards the fermentation to a small extent. I have seen it stated that boric acid favours the growth of yeast to some extent, but this may have been in sugar solutions containing a different proportion of the acid. In articles of food, boric acid is often found in very considerable proportion. In milk

and cream I have found it to the extent of 35 grains per gallon, and this appears to be the quantity very generally employed, although in a sample of condensed milk I have found fully three times that amount. In butters I have detected as much as 10 grains of boric acid per lb., and Mr. Hehner gives no less than 50 grains per lb. in one sample of butter. In variable quantities also I have obtained it in fresh fish, tinned oysters, and in sausages, all of which goes to show the widespread use of boric acid as a preservative for various kinds of food.

The question as to the action of boric acid on the human organism is a very difficult one, and doctors differ very greatly, not only as regards its precise effect, but also as to whether it has any injurious effect at all when taken internally in the small doses in which it is found in foods. As regards comparatively large quantities there can scarcely be two opinions as to the effect of boric acid, and the "British Pharmacopœia" places the medicinal dose at only from 5 to 30 grains. It has been recorded that dogs and rabbits have been made very ill by the daily consumption of from  $7\frac{1}{2}$  to 18 grains of boric acid per day, and one case is given in which a large rabbit was killed by 60 grains being administered to it. These facts would evidently go to prove that boric acid (and borax may be taken as belonging to the same category) has most decidedly poisonous properties in these comparatively large doses. Indeed, I have seen it stated that several cases of poisoning have occurred in Sweden, where this chemical is largely employed in preserving fish. As an example of how authorities differ, we may take first the opinion of three medical men (Messrs. Vigier, Ogilvy, and Caldwell) who hold that no bad effects are produced when borax or boric acid is taken internally. Dr. Ogilvy and three friends each consumed  $\frac{1}{4}$  lb. of borax in a month, equal to fully 35 grains per day, and profess not to have been affected injuriously. On the other hand, very careful and repeated experiments, carried out by Dr. Forster, showed that from  $7\frac{1}{2}$  to 45 grains of boric acid added daily to human food caused an increase in the secretion of bile, and hindered very markedly the digestion of albumen, which he determined by analysing the excrements. Sir Henry Thomson states "that there is no doubt that boric acid in full doses was an irritant to the digestive organs, but that it by no means followed that a small quantity would exercise any evil influence whatever. . . . A quantity of 8 to 10 grains to the pint would not be injurious to an adult who consumed a pint daily, but infants who were large consumers were also much more liable to injury by the mixture. . . . The proportion named would be calculated to be injurious when taken habitually; certainly to children under three or four years of age." There is, most undoubtedly, a lack of definite information as regards the physiological action of boric acid, but much might be done to add to our knowledge, especially on the lines of Dr. Forster's experiments. The matter cannot be settled by taking doses of the antiseptic for a limited period, like Drs. Ogilvy and Caldwell, and assuming that there has been no effect produced because you do not feel your health materially interfered with. Before this would take place a long period of time might elapse, and yet the power of the digestive organs may be slowly but surely impaired. As regards Sir Henry Thomson's opinion that "8 to 10 grains to a pint (of milk) would not be injurious to an adult who consumed a pint daily," it is manifest that this is only given on the supposition that milk is the only food which has been borated. But when we consider that butter, fish, sausage, and no one knows what other articles of food may be doctored with boric acid or borax, we can well understand that an adult may take even more than a full medicinal dose of this substance every twenty-four hours; and, when we reach this limit, it is surely reasonable to think that it is rather much.

(To be continued.)



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## Food and Sanitation.

SATURDAY, APRIL 25TH, 1896.

### COMPENSATION FOR TUBERCULOSIS CATTLE.

WE are so fond of boasting that our House of Commons is above suspicion of corruption, that the bulk of the public has really deceived itself into the belief that such is really the case. The unblushing exploitation of taxpayers proposed by the Government

for the relief of their own class—the landlords—which is falsely paraded as a measure to benefit English agriculture, shows how willingly Members of Parliament will allot public money to themselves and their class; but when it is a question of fair play to traders it is quite another matter. It is right, in the eyes of Mr. Chaplin, that the landlord classes should be compensated for cattle slaughtered on account of foot and mouth disease, but the butcher who buys a beast that suffers from tuberculosis and cannot tell that it is diseased until he has it slaughtered, has no remedy against his Grace or his Lordship who bred the animal. He must be satisfied to be the loser and have the carcase destroyed, or run the risk of fine or prison should he elect to sell it. But the butcher is a mere trader, and not one of the salt of the earth. If he were the head of a gang of opera bouffe financial filibusters, for example, the *Daily News* even would champion his cause. As it is, that journal produces the following drivel about him:—

“The House of Commons, it has been said, has a passion for compensation. It was in reliance on this fact, we suppose, that a deputation of the Meat Trade waited on Mr. Chaplin yesterday to ask that compensation should be paid to the purchasers of cattle which, after slaughter, are condemned and destroyed as unfit for human food on account of the presence of tubercular appearances. But even Mr. Chaplin draws the line somewhere—especially when landlords are not concerned. ‘Some of the public might think,’ he said, ‘that there was another side, and that they were asking for compensation because they were not allowed to sell meat detrimental to the public health.’ We should think some of the public might well say that, and even put it a little more strongly. To sell food unfit for human consumption is an offence. To demand compensation for being kept on the safe side of that offence is a thing which even the present House of Commons might well boggle at.”

The British shopkeeper is the least alive to his own interests of any class in the country. If he had a true appreciation of them he would keep his support and votes for other than journals like the *Daily News*, and politicians like Mr. Chaplin. This instance shows the need for a federation of grocers, butchers and other trade organisations, and for a traders' party in the House of Commons. Mr. Field, for example, is worth more to the traders of the United Kingdom than the whole batch of place-hunting big-salary-grabbing bores and quacks who man the front benches, and who, whether they label themselves Liberals or Conservatives, have one common object—the plunder of the trading classes for the benefit of landlords, water and railway company shareholders and financial rings. Object-lessons like this contemptuous refusal of compensation for tuberculous meat ought to open the eyes of at least one important body of traders to the fact that politics is simply an organised hypocrisy, and that the trader is despised save when one of the impostors comes cadging votes.



## MR. R. GIBSON ON PRESERVATIVES.

MR. R. GIBSON gives some advice to Irish butter-makers which we hope they will not accept. He says:—"Many Irish butter makers are still unwise enough not to use preservative. Don't mind the ignorant men who tell you butter should be made without preservative; their ignorance is only exceeded by their impudence, in setting up as teachers, while knowing nothing about the subject they dogmatise on. The preservative that is best for milk is not suitable for butter. The preservative best for butter is by no means best for meat. 'Ware hawk, when anyone tells you he can supply you with a preservative equally suitable for meat, milk, and butter. The best butter preservative will *harden* meat, the best meat preservative will *soften* butter, and neither of these is the best for milk. There are three very injurious, in fact poisonous, preservatives; they should never be used for preservation of food. There is another very powerful and perfectly wholesome preservative, but it is unpleasant in smell and taste, and therefore should not be used with food. Besides these, there are others as wholesome as table salt; less dangerous, even if taken to excess, than common salt is, and thoroughly efficacious each in its own proper sphere when properly used. Let no one think for a moment that preservative will make bad butter good. It cannot take away the smell of dirty vessels, or foul pipes; it cannot take butter-milk out of over-churned butter, as I found some negligent makers expected it to do. If properly applied it keeps good butter from going bad for some time, and it prevents bad butter from getting worse, and it greatly helps to make butter firm. It does not work any miracles, but it is of great help to the careful, intelligent butter-maker, and of the greatest service to the retailer and the consumer. I make these statements not only with the fullest appreciation of my responsibility in doing so, but with the fullest practical knowledge of the subject. I have given the matter close attention during the last fifteen years, and whatever is known on the subject I have made it my business not only to know on hearsay, but to put to practical test. Knowing all the pros and cons, I say to every butter maker, *use preservative* always in your butter. Use the very best preservative only, and only that suited for butter. Use it like sane people, not like careless stupids, and you will find it repay its cost over and over again."

It was folly to have ever allowed preservatives in food, for it is owing to our Government having done so that Danes, French, Germans and our colonies have been able to compete with our native butter industry. We want the use of preservatives prohibited—not extended. It is monstrous folly that the butcher, milk-vendor, butterman, etc., can physic his customers just as he pleases.

## BAD BEER.

THIRSTY man has, from time immemorial, been induced to drink vile concoctions calling themselves ale or beer; the secret arts of adulteration are probably as old as the art of brewing itself. But we must make an honourable exception in favour of ancient Babylon, if we are to believe Rabbinical tradition, which gravely reports that the bitter beer of that city kept the Jewish exiles free from the leprosy which so often attacked them in the land of Judah. In our own history, the archers who shot at Crecy were half-poisoned by the female brewers of their day, and retaliated by putting them in the pillory, or ducking them in the village pond. Bad liquor, again, was at the bottom of the great Town and Gown row at Oxford on St. Scholastica's Day, 1354. The students at a tavern declared the wine was bad, and, with undergraduate impulsiveness, threw it in the vintner's face; thereupon the town bell was tolled, the townsmen mobilised them-

selves, and a band of countrymen—probably many of our Crecy archers among them—marched in, under a dolorous banner, and assisted in scalping the student. However, the moral victory lay with the University which acquired the right of assaying the liquor sold at the taverns.

Some two centuries later Shakespeare makes mine host of the Garter say to the fiery-nosed Bardolph, when he left the service of the impecunious Falstaff, for the congenial office of tapster, "Let me see thee froth and lime." But often the ale was merely spiced or seasoned with pepper, garlic, and peony seed, and on fasting days with fennel. The most innocent and transparent device was to put rosemary into the ale pot, to diminish its holding capacity. It was really important that men should have pure ale at a time when cider and perry were rarely seen; tea and coffee were unknown, and the water was such as no teetotaler would look at twice. In fact, the average consumption of ale was three quarts a day per man. In addition to this modest daily allowance, there were drinking bouts at all the festivals, which were consequently known as "ales," as, for instance, "Lamb ales," "Whitsun ales," etc.; rare occasions, which only came round once a week. At the church-ales large draughts were drunk in honour of the apostles and saints "to maintain the profit of the church," a new form of offertory, in fact. This connection between the Church and the tavern is also found in Tyrolese villages, where the priest is inn-keeper. To return to England, each lady of the court had a tankard of breakfast ale left at her door in the morning, and when she died the funeral baked meats were washed down with ten bottles of wine and twenty quarts of ale, after the manner of a high-class Irish wake. The parson who baptised a child had his shilling's worth of ale, but the gossips who assisted at the ceremony half as much again, while a quart of ale was equally the reward of the man who won the Sunday racquet match against the wall of the church, and of the overseer's spy, who ejected from the parish any female tramp blessed with children.

The Manor Courts were responsible for keeping up the standard of quality. To such a court it was once reported that John Kempster and Thomas Byrd did not sell their ale according to law, but made it so exceedingly strong (probably with drugs) that it caused affrays and bloodshed; and idle persons from the said alehouse so offered divers abuses to the inhabitants, as in pulling down stiles, throwing men's wains and ploughs into pools and wells, and putting their yokes for their oxen into lakes and miry places. In London and other cities ale-conners, or tasters, were appointed at some epoch in the misty past before the Tower was built, and still are to this day in the City, where they are chosen annually by the liverymen on Midsummer's Day; now the office is nearly a sinecure for the benefit of decayed citizens, but it was a stern reality in old times. The keeper of an ale-house was fined if he broached a cask without first giving notice to the ale-tasters, and if they found an ale-wife guilty of adulteration they strapped her down in the cucking-stool, and dipped her to the chin in Holbers Dyke. The Vintner's Company had the same oversight over the quality of wines. Thus they sentenced one, John Drew, who was found to be selling impure wines, to be imprisoned for a year and a day, and to be made to drink his own stuff, and have it poured over his head. In later years they erected stocks in their Guildhall, in which they deposited the malefactor as an awful warning. When in 1419 the Lombards began to corrupt their sweet wines, and when the knowledge thereof came to John Ranwell, Mayor, he commanded the heads of the butts, to the number of fifty, to be broken in the open streets, so that the liquor passed through the kennels or gutters like a stream of rain water, and an evil smell arose, which justified John Ranwell's somewhat arbitrary conduct. This same Vintners' Company enacted that



no cloth was to be hung before the door of the cellar, but that each customer should see with his own eyes his wine being drawn from the cask. They went so far in their regard for the purses and the morality of their customers that they even refused to grant a licence to a house, which had in its back-yard a bowling-alley and a pair of butts (for archery), "where poor men would spend their thrift and cause brawls."

In Henry VIII.'s reign, turkeys, beer, and "that wicked weed called hops," came into England in one year—that is to say, the admixture of hops turned "ale" into "beer." The arrival of the turkeys must have been a coincidence. But the innovation was not favourably regarded, and a writer of that time says, with a fine contempt for our very worthy neighbours, "Beer is a natural drink for a Dutchman, and now it is much used in England, to the detriment of many Englishmen." How the good man would have shivered if he had but seen the substitutes for hops that are now employed, which make some of the beer sold in our days neither a national drink for a Dutchman nor anyone else. In London, the taverners used to add carraway seeds, liquorice, molasses, and salt to give body to the liquor, and quassia, horehound, and gentian to give it bitterness. The licensed victualler of the country was still more unscrupulous, and added tobacco and a poisonous berry called *Cocculus Indicus*, which first maddens a man and then induces giddiness and stupor. To the maddening influence of this berry most of the tavern-brawls were attributable, and it caused the significant expression "ale-dagger" to be invented. "He that drinketh with cutlers must wear an ale-dagger." In 1736 London was becoming rapidly demoralised in consequence of swallowing rivers of vile Hollands. It was almost as cheap as ginger-beer, and, like that innocent beverage, was sold on tables in open street, especially at Bartholomew and other fairs, women as of old being the temptresses. Wherefore in that year a duty was put on the stuff, and a heavy licence was exacted in addition from the dealers, so heavy that it proved prohibitive for small dealers. They were "compensated" in a way that would scarcely commend itself to modern apostles of compensation, though it had a very real value in those days of close guilds and companies:—"All distillers of seven years' standing and all apprentices shall be allowed to exercise any other trade or business." In connection with such onslaughts on "the trade," we may note that in 1630 there was great danger of a famine; the crops had failed abroad, as well as at home, and no corn could be spared for malting purposes; so the justices of the peace were sent round to suppress off-hand all unnecessary ale-houses"; every tavern was also compelled to announce itself by the old-fashioned ivy-bush above the door, in order that the justices might get some idea of the number of taverns in each place.

At the present day, of the adulteration of beer, salt, quassia, and sulphate of iron are moderately innocuous. But the same cannot be said of that *Cocculus Indicus* described above, which is more used than ever by the ingenious publican. Every year two hundred and fifty tons of the poisonous berries are imported to give strength to the well-watered liquor. It may be obtained from any brewer's druggist under the name of "multum." Porter, on the other hand, may be confidently recommended to those who have an aversion to poisons, as it only contains lime and treacle, liquorice and salt. Of course, these aspersions on the character of beer and its cousins only apply to that which issues from the lower classes of houses, and particularly where there is little competition. The most amazing concoction we ever tasted was in a lonely little village on the outskirts of the Cotswolds, which shall be nameless. Turning to wine, we find that John Bull patiently and even complacently drinks champagne made out of rhubarb stalks, gooseberries and sugar, and in America more of the sparkling nectar is bottled for Cousin Jonathan's consumption than ever crosses

the Atlantic. Thousands of pipes of spoiled cider and bad brandy are turned into port to which bigberries lend the rich colour, while lead is added to preserve it. Elderberry and logwood produce an excellent colour for claret, oak-bark is useful if dryness be the object, and either will furnish the delicate bouquet which appeals so much to connoisseurs. Cheap whisky is sent to France, and returns as the best cognac, after it has been coloured with burnt sugar, and flavoured with the refuse grapestones and grape-skins from the wine presses.

#### BUTTER ADULTERATION.

A VERY interesting illustration of how the Danish butter trade is protected and promoted by the Danish Government was afforded, on April 16, by a prosecution in the West Ham, London, Police-court. It would seem that Mr. Thomas Goodwin, trading as the Danish Dairy Company, is in the habit of selling in his multitude of establishments, all through the country, margarine for butter! The business seems to be profitable, for on several occasions "The Company" was mulcted in heavy fines. But its establishments appear to be still doing a flourishing trade. In the several cases before the Court conclusive evidence was given of the adulteration and its detection. On March 14 and 21 a young woman named Edie Smith was sent into the defendant's shop at Stratford to buy half-a-pound of the shilling butter which was advertised in the window. She made the purchase, which was wrapped in two papers, the inner one of which bore the inscription, "Fresh Dairy Butter. Guaranteed Absolutely Pure." This sample was sent to Mr. Bernard Dyer, a public analyst, and his analysis showed that it was composed of not quite 25 per cent. of butter and more than 75 per cent. of matter foreign to butter. Miss Edie Smith and Mr. Harold Faber corroborated. Mr. Dyer said that the 75 per cent. of matters foreign to butter which he found in the sample were fats other than butter fat. He detected the presence of a vegetable fat—sesame seed oil—which was a very common constituent of margarine. But it was proved that this was not by any means an isolated case. Very remarkable evidence indeed was given of the general methods in which the extensive business of the company was carried out. On cross-examination, Mr. John Chadbourne, the district inspector of the company, made some very interesting admissions. This was not, he confessed, the first complaint of the kind against the Danish Dairy Company. They had been convicted for the same kind of thing on January 2, 1895, at Croydon, when they were fined £10, and at Banbury on January 9, 1895, when they were also fined £10. The head office of the firm was at Dudley. A clerk from the office at Dudley produced a circular which she said she sent to each of the managers of the defendant's shops, drawing their attention to recent police-court proceedings in reference to margarine. It ran: "We want you to still increase your sales, but you must run no risk whatever. Boxes must be used for pounds and proper printed papers for half-pounds." This closed the case, and Mr. Baggallay imposed a fine of £10 and £5 costs, and, in default, distress or a month's imprisonment. The second set of summonses for similar offences on March 21 was then taken, and the evidence given in the first case was repeated. The only difference was in that of Mr. Dyer, who said his analysis in this case showed 20 per cent. of pure butter and 80 per cent. of foreign matter. Mr. Jones made no defence, and his worship said the fine would be £10 and £2 4s. 6d. costs, and distress or a month's imprisonment in default. The difference of the profit between the sale of pure butter and margarine at the same price would not be long in bringing in the amount of the fines. There is one point of view in which the case is especially interesting to Irish butter merchants and dairymen,



who are the constant victims of similar practices. The prosecution was organised and conducted throughout, not by the London authorities, but by Mr. Harold Faber, who was in the employment of the Danish Government, and was at present residing in London as a Commissioner of Agriculture for the Danish Government. If Irish butter suffers in the same fashion, as it does suffer, no similar Government official is to be found to expose the deception and champion the good character of the Irish produce. The Danish Government is wiser in its generation than the English, which can find nothing more profitable to do for the farmers than to join in the lamentations about agricultural depression. The Danish Government goes more systematically to work, with the result that the Danish produce is forcing itself into the English and Irish markets. It is hard enough that Irish butter has to fight the competition of the Danish under these circumstances—harder still when to this is added the competition of margarine masquerading as pure dairy butter. An Irish Government would do for Irish produce what the Danish does for theirs. But the English Government has neither time, knowledge, nor inclination for the task.—*Dublin Evening Telegraph.*

#### ADULTERATION OF LARD.

A MEETING of the Manchester, Salford and District Pork Butchers' Association was held on April 20th at the Pine Apple Hotel, Water-street, Manchester, Mr. Thomas Kay presiding, to consider the question of lard adulteration. The following resolution was unanimously adopted: "That the Manchester, Salford, and District Pork Butchers' Association beg to call the attention of the Committee of the House of Commons now considering the clauses of the Food and Drugs Act to the great amount of adulteration going on at the present time in American lard, which places the English trade at a very serious disadvantage, as all our home product is the pure article. The Association hopes this matter will receive the careful consideration of the Committee, and that in the event of any future legislation the standard of pure lard will be hog's fat." It was ordered that copies of the resolution should be forwarded to the chairman of the Committee (Mr. T. W. Russell).

#### TUBERCULOSIS AND MILK.

##### ANOTHER COMMISSION TO BE APPOINTED.

In the House of Commons on April 21, Mr. Cawley asked whether, in view of the fact brought to light by the Royal Commission on Tuberculosis, that so many cows suffering from tuberculosis were giving milk which was supplied to consumers, he would institute some system by which all cows whose milk was sold for public consumption should be placed under compulsory inspection?

Mr. Chaplin said while the Report of the Commission of 1895 had dealt fully with the scientific aspects of the matter referred to in the question, no report had been made upon the administrative procedure necessary to give effect to the conclusion of the Commission. The Government, therefore, had assented to the proposal that a Royal Commission should be appointed to consider and further report upon these matters. Legislation would be necessary to enable him to order the compulsory inspection of all cows whose milk was sold for public consumption, and he thought that should be postponed pending the inquiry which had been determined upon. In the meantime, he might say that there was a simple process of testing this matter by boiling the milk, when absolute immunity could be assured for the consumer.

Dr. Farquharson inquired whether it was not a fact that tuberculosis could be discovered from the udders

of the cows; whether, under these circumstances, inspection would not be the most effectual means of discovering its presence; and whether, during the time this new Commission was reporting, many lives might not be lost through the consumption of diseased milk.

Mr. Chaplin said legislation would be necessary to give powers of compulsory inspection. He had no doubt that there was a great deal in what the hon. gentleman said, but he could not do what he suggested without legislation, and legislation with the business now before the House would be impossible this Session.

#### THE FOOD ADULTERATION COMMITTEE.

It is stated that, although the members of the Food Adulteration Committee have informally deliberated on the questions raised by the evidence, the report will probably differ considerably from the forecast given of it last week. Although the majority of the Committee are strongly in favour of whatever is thought to be most likely to benefit the agriculturists, the proposal that margarine should only be sold uncoloured is not approved by the Chairman, Mr. T. W. Russell, who will draft the report; and other members of the Committee will strongly protest against any unreasonable interference with trade in articles not deleterious to health. The Chairman's report will not be drafted till after Whitsuntide, when the formal discussions in Committee will take place. Whatever the report of the Committee may be, there will be no time for legislation on the subject this session.

The Committee finds that there has been great laxity in the administration of the Act, and proposes in effect that where this laxity is shown to exist the administration of the Act shall be transferred to the County Councils, while certain rights of intervention shall be vested in the Local Government Board. It is further proposed that a person who has offended for the second time against the Act shall be liable to imprisonment without the option of a fine, and shall be compelled to exhibit the record of his previous conviction at his place of business. The latter proposal is an adaptation from the French Code. It is further proposed to give the Custom House officials the power to take samples of imported butter for analysis.

It is believed to be practically settled that there shall be a Board of Reference, to which would be entrusted the administration of the Acts. It would be left to this authority to determine standards of purity and quality.

#### THE CURRANT CROP.

THE Consular report upon the trade of Greece says about the present disastrous condition of this crop:—

The currant is the staple product of the Morea, and the prosperity of the entire district depends upon it. Unfortunately, the Morea, like many other countries, is suffering from over-production. In order to meet the almost unlimited demand from France for wine-making purposes, some years ago, an enormous area was planted with currant vines, and the crop within fifteen years has been almost doubled. The French vintage having to some extent recovered, and heavy import duties having been imposed on currants entering, the French demand has been almost entirely lost, the consequence being that 30,000 to 40,000 tons of currants are annually produced over what is required for the world's consumption. With an article like currants, whose consumption for eating purposes only increases very slightly, however low the price may be, it will readily be understood that such an enormous annual surplus over and above requirements has completely demoralised trade in the article, and brought down prices to a figure which scarcely covers cultivation expenses, and it is evident that if this state of



affairs lasts two or three years longer, most of the currant plantations will have to be abandoned, and a once thriving community will be brought to utter ruin. The cessation of the French demand caused prices to drop 50 per cent. at once, property lost nearly all its value, and, although the growers have been fighting manfully, hoping against hope for the last three years, they are now at the end of their resources, for capitalists who have in their own interests been endeavouring, during these hard times, to support them, find themselves no longer able to do so. The currant industry in the Morea is doomed, unless some new outlet for the sale of currants were suddenly to be found, or some other expedient were devised. Could the currant growers all agree to uproot one-third of their plantations, the whole problem would be solved, but, unfortunately, this is an impossibility. Strange as it may appear, a currant crop of 130,000 tons, which is about the amount required for the world's consumption, would realise over £2,000,000, whereas a crop of 170,000 tons would bring in barely over £1,000,000.

### BACTERIA IN MILK.

A COMMUNICATION on bacteria in milk as supplied to the city of Edinburgh, and the relative efficiency of different methods for their removal or destruction has been made by Drs. Hunter Stewart and J. Buchanan Young. The authors stated that the cowhouses of this country were not kept with anything like the care of those in Denmark and Holland. The cows were not groomed, the cowhouses were not flushed with water, the hands and clothing of the milkers were not properly attended to, nor were the cows' teats properly cleaned. Since November, 1894, 300 samples of milk had been examined from fifty dairies scattered throughout the city. It was found that at three hours after milking there were, in winter, on an average 24,000 bacteria per cubic centimetre. In spring and early summer 44,000; in late summer and autumn 173,000. It was found that in dairies supplied with milk from the country the average number of micro-organisms five hours after milking was 41,000 per cubic centimetre, while in dairies supplied with milk from town byres the average was 352,000 per cubic centimetre. The importance of having cowhouses outside the city was strongly emphasised. The various modes of sterilising milk were discussed, and it was pointed out that the great objection to the use of sterilised milk was the change of flavour and the alleged increased indigestibility. The conclusions were that milk kept for one hour at 212° in bottles hermetically sealed remained sterile for more than a month, and was quite sweet and palatable, though it had a boiled taste; that milk heated by means of Dr. Cathcart's apparatus remained quite sterile for forty-eight hours, though the boiled taste was marked; that milk kept for thirty minutes at 158° F. was quite sterile at the end of twenty-four hours, and contained very few microbes at the end of forty-eight hours. In all these three methods the micro-organisms of tubercle and diphtheria were certainly killed. Scalding at 176° F. with every precaution kept the milk sterile for twenty-four hours, but in carrying out this process on a large scale there was considerable risk of post-scalding contamination, so that there was no guarantee that the bacillus of tubercle and diphtheria, if present, was destroyed.—*British Medical Journal*.

### MILE-END VESTRY AND ADULTERATION.

THE quarterly report of the analyst, Mr. Harland, was presented as follows: "During the quarter ending March 25, 1896, I have analysed 75 samples collected by your inspectors. This number comprised 26 samples of milk—23 genuine, 3 admixed with added water to the extent of 35, 10, and 7 per cent. respectively; 19 samples of butter—18 genuine, one admixed with 45 per cent. of margarine; 5 samples of coffee—4 genuine, one admixed with 10 per cent. of chicory; 9 samples of pepper—8 genuine, and one admixed with 8 per cent. of ground rice. The remaining number comprised cheese, mustard, lard, and oatmeal, and were genuine."

### THE FAILSWORTH SEWAGE PURIFICATION WORKS.

THE formal opening of the Failsworth Sewage Outfall Works took place on Thursday, April 2. The ceremony was attended by a large company, and was presided over by Mr. Councillor Wild, J.P., Chairman of the District Council. Mr. Councillor Dunkerley, Chairman of the Sewage Committee declared the Works open. Mr. C. J. Lomax, A.M.I.C.E. (Messrs. Lomax and Lomax, Manchester and Bolton), is the engineer who has carried out the scheme. Messrs. Freeman, of Hollingwood, are the contractors, the process adopted being the "International."

The Outfall Purification Works, which have been constructed, embody all the latest improvements in sewage treatment, and are on a scale which will ensure the continual and successful treatment of the sewage. The sewage enters the Outfall Works at an elevation of 12ft. above the water level in the tanks, advantage being taken of the fall by utilising the water power for chemical mixing purposes, and other minor work. Sufficient power is also obtained to work an air compressing engine, which will supply the necessary power to a ram for elevating the sewage from the few houses situate somewhere about 35ft. below the water-level in the tanks. The sewage passes from the mixing house into two detritus tanks. The action of the precipitant "Ferozone," which has been previously mixed with the sewage, shows itself to a striking degree in these tanks. The sewage passes out by troughs into six upward flow tanks, and the degree of clarification that takes place in these tanks is remarkable; from the tanks the effluent passes on to 6in. polarite filter beds. The filter beds adopted are on an entirely new system, the patent rights being the property of the International Water and Sewage Purification Company, Limited. In the ordinary method of filtration the beds are in the first instance slowly filled up until about one foot of water stands upon the surface, the process of filtration then commences. The water in passing through the bed is exposed to the purifying action of the oxygen contained in the atmosphere, but the available oxygen in the bed is rapidly exhausted, and so long as a head of water is kept upon the surface of the bed it is physically impossible for the air to penetrate into the interstices of the filtering material. To overcome this difficulty the International Company are now putting down a new process, Failsworth being the second successful installation. The filter beds, being six in number, are grouped three on each side with a central inlet channel dividing them. This inlet channel is of sufficient capacity to cover the filter beds three inches in depth with water.

Each bed is supplied by two automatic flushing syphons, which discharge the water from the inlet channel in the space of about thirty seconds over the entire area of the filter; the water then sinks through the bed and disappears in about five minutes. The flow of water to the inlet channels is so regulated that it takes exactly twenty minutes to fill and discharge, therefore the filter bed is entirely empty and exposed to the atmosphere for fifteen minutes out of every twenty. Three inches of water spread over the surface every twenty minutes is equal to a thousand gallons to the square yard in twenty-four hours, and this is the speed at which the Failsworth filter beds are now working successfully. It will be clear to all that this intermittent method of filtration must be immeasurably superior to the old method of continuous filtration, because the bed is allowed fifteen minutes out of every twenty for aeration. By the intermittent method of filtration purification is obtained not only by direct oxygination, but also by the organisms that have been proved to rapidly increase in the beds. The effluent as it leaves the filter beds is clear and sparkling, devoid of froth on shaking, and is entirely free from odour. The area of the filter beds is 960 square yards. One singular feature in the intermittent filtration is, that whilst this large volume of water is being rapidly flushed upon the bed, not one particle of sand is disturbed from its place.

### BUTTER—A FALSE WARRANTY.

AT Hampstead, A. W. Rolfe, wholesale provision dealer, of Hemstall-road, West Hampstead, was summoned at the Edgware Petty Sessions on Wednesday for using a false warranty, denoting an article of food, to wit butter, to be pure, but which when analysed was found to contain 20 per cent. of foreign fat.—Mr. D. R. Soames, who appeared for the defendant, addressed the Court before the case was opened. He said that the Amending Act of 1879 provided that proceedings in a case of this sort should be taken within twenty-eight days after the alleged offence was committed. This so-called offence occurred on February 28. The Bench overruled this objection.—Mr. Soames then urged that no warranty was given. It was simply an ordinary billhead, with an account "6lbs. of pure butter, 5s. 3d.," and when this was paid was signed "Paid, Rolfe."—The Bench quashed this objection, and Mr. Soames then pointed out that under the Food and Drugs Act the summons ought not to have been issued against the wholesale dealer.—Mr. Watts: The retail dealer was the proper person to take action. This was not allowed to stand, and Mr. Watts opened his case with Mr. Howard, provision dealer, of Edgware, in the box. Howard said he bought the butter of Rolfe, but he never understood the bill to be a warranty. Rolfe did not sign the bill until the money was paid.—The Bench imposed a fine of £5 and costs. Mr. Soames applied for a reduction of the fine, but Mr. W. S. Gilbert (one of the magistrates) pointed out that the defendant came before them with all the immunities of a wholesale dealer, and must put up with the fine.



### THE NORTH-WESTERN SANITARY INSPECTORS' ASSOCIATION.

On April 11, at the Free Library, William Brown-street, Liverpool, the ninth annual meeting of the North-Western Sanitary Inspectors' Association was held, Mr. William Bland, the chairman of the council, occupying the chair. The council's nomination of Mr. B. Barrow, city auditor, for election as an honorary member of the association was received, after which the secretary (Mr. Ernest Worrall) submitted the council's ninth annual report. It stated at the outset that greater progress had been made by the association during the last session than in any previous one. The additions to the roll of the association during the year numbered six honorary members, forty-one members, and one associate, while the names of ten honorary and ordinary members had dropped from the lists through deaths and resignations, the strength of the association at the present time being twenty-two honorary members, 119 ordinary members, and one associate member—total, 142. An important event of the session was the severance of the association from the metropolitan association, and the increased membership and improved financial condition of the association since that occasion justified, the council claimed, the course which, after mature consideration, they decided to follow. The attendance at the meetings, especially those held outside Liverpool, had been much better, and on all sides there was evidence of greater interest being taken in the affairs of the association. Regarding the finances of the session, the report stated that the adverse balance of £11 8s. 4½d. in last year's accounts had been wiped out, and notwithstanding the higher expenditure consequent on the larger programme and work of the session, they commenced the current year with a credit balance of £7 4s. 3d. To all who had contributed lectures and papers, and to the honorary officers of the association, the council extended their cordial thanks. The report was unanimously adopted, and the treasurer (Mr. N. Coates) and the secretary (Mr. Worrall) were re-elected, several members testifying to the excellent work done by both those gentlemen on behalf of the association. Mr. John Ridley was elected assistant secretary. A vote of thanks was subsequently passed to the mayor and chairman of the Health Committee of St. Helens for the hearty welcome accorded to the association on the occasion of its meeting there last month.

### POISONED BY BAD TOMATOES.

At Islington Coroner's Court, last week, Dr. G. Danford Thomas held an inquest on Annie Huckle, aged 70 years, lately residing at Highbury-quadrant, Highbury New Park.—George Huckle, the husband, a builder, stated that he and his wife ate some tomatoes, which had been purchased for 2d. a pound. Shortly afterwards she became very sick.—Dr. Joseph Ingleby stated that he was called to see deceased, who was suffering from violent pain. It appeared to him like a case of colic. He called again in half an hour and found her to be in a comatose condition. He visited her several times, and in the morning she died. A post-mortem examination showed that great irritation had been caused by some food the deceased had eaten—probably tomatoes.—Joseph Claxton, a green-grocer, from whom the tomatoes were said to be purchased, said he bought them at a sale at Covent Garden Market. They came in boxes, and very few were bad.—The jury returned a verdict that "Deceased died through eating unsound fruit."

### BUTTER.

CLARA BENTLEY, grocer, of Cleckheaton, was fined 10s. and costs, or ten days' imprisonment, at Bradford, on April 20, for selling adulterated butter. The inspector asked for three-quarters of a pound of butter at 1s. 2d. per lb. Upon analysis it was found to consist of only 40 per cent. of real butter and 60 per cent. of margarine.

### THE WEST RIDING MEDICAL OFFICER.

THE report of the Sanitary Committee, which was received, contained a statement of the resignation by Dr. Whitelegge of his post of West Riding Medical Officer, in consequence of his appointment as Her Majesty's Chief Factory Inspector, and a recommendation that a successor be advertised for at a salary of £800 a year.

Alderman Sugden, the recently-appointed chairman of the Committee; Alderman Kendall, who had acted as chairman of the Committee from its foundation until recently; and the Chairman of the Council referred in terms of the most complimentary character to the services rendered by Dr. Whitelegge, Alderman Kendall observing that when the committee began its work almost every medical officer in the county was opposed to it. Now almost everyone was, thanks largely to Dr. Whitelegge's urbanity, working with the committee.

It was eventually resolved that a salary of £800 should be offered, and that the gentleman appointed should be at liberty to apply for and if appointed to hold the office of Chief Sanitary Officer to the Rivers Board.

### POPLAR BOARD OF WORKS FINDS ADULTERATION INCREASING.

THE Analyst to the Board (Mr. W. C. Young) presented his quarterly report as follows:—"I beg to report that during the quarter completed this day I have analysed 74 samples, all of which were purchased and submitted to me by your sanitary inspectors. This number includes the following articles, viz.:—36 milks, 12 butters, 10 breads, 6 oatmeals, and 10 cocoas. Of the milks, 28 were genuine, 1 deficient in cream to the extent of 73 per cent., 6 adulterated with water, the degree of dilution being 6, 6, 8, 14, 16, and 19 per cent. respectively, and 1 deficient in cream to the extent of 46 per cent., and adulterated with 20 per cent. of water. Of the butters, 7 were genuine and 5 adulterated with foreign fat, the amount found being 25, 43, 45, 70 and 96 per cent. respectively. The breads and the oatmeals were all unadulterated. Of the cocoas, 6 were genuine and 4 adulterated with a mixture of arrowroot and sugar, the proportion of the mixture present being 68, 74, 79, and 87 per cent. respectively. I have further to report that during the year 293 samples have been analysed, and of these, 65, or 22.1 per cent., were found to be adulterated. This result shows a slight increase of adulteration, as last year the percentage was 20.6. I beg to call your attention to the gradual increase of adulteration in the district during the last six years, as shown below:—1890-91, 12.6 per cent. of adulterated samples; 1891-92, 14.4 per cent.; 1892-93, 18.9 per cent.; 1893-94, 20.5 per cent.; 1894-95, 20.6 per cent.; 1895-96, 22.1 per cent."

Mr. Dalton remarked that during the past quarter the Board had been criticised for not taking enough samples of publican's spirits, and too many of milk. While not agreeing that this was so, he mentioned the matter so that more samples of spirits could be taken.

Mr. Booth said in his parish too many samples of spirits were taken—(laughter)—and the complaint came from those who had something to do with milk.

### WHISKY.

At the Bradford West Riding Court on April 20, Henry Butterfield, innkeeper, of Scholes, was summoned for selling adulterated whisky. Inspector Quinlan produced the analyst's certificate relating to half a pint of Irish whisky which was purchased from the defendant on March 16th, from which it appeared that the spirit contained an excess of 14.1 parts of water. A fine of 20s. and costs was inflicted, or a month's imprisonment.

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## THE PETROLEUM ACTS.

MR. A. L. BRIDGE has made the following instructive report to the South Mimms Rural District Council:—

I have pleasure to lay before you a statement of the proceedings under the above Acts.

I have tested some twenty-one samples of oil, and the flashing point ranged from 80 to 106 deg. F., but it is only fair to say that the one flashing at 106 deg. F. was not American, but a Scotch oil.

I have to report that no accident from explosion of oil has occurred in your district during my term of office, whereas, in London, the number of fires from this cause is over 19 per cent.; in Glasgow where Scotch oil is used flashing at 100 it is 17 per cent., the oils flashing at a low temperature are cheap, from the fact that they are not distilled to the same extent as those flashing at a higher point; if the question of economy be considered, it cuts in two ways, first:—

The oil is cheap at first cost, but it is more or less volatile, and hence ensues a loss which, in my opinion, more than makes up the gain of the first cheapness. In my own personal experience, which is one of many years, I have known casks of petroleum of 40 gallons capacity to evaporate altogether, and leaves not a wrack behind. This is done in an imperceptible manner.

Petroleum is used by many manufacturers, notably by makers of imitation ivory and paper manufacturers, etc., and it is quite within the range of probability that if the flash-point were raised an outlet would be found for the oil of a higher volatility.

In the process of burning in a lamp, oil is raised in temperature, with a consequently nearer approach to its flash-point; and in the case of a lamp with a metal body, the heat of combustion is carried much more quickly to the oil than in the case of a lamp with a glass vase or body, owing to the superior conductivity of metal relative to glass; but glass is liable to sudden and unexpected disruption if not properly annealed, and for this reason is not a very suitable material to be used in the manufacture of lamps. The reason that it is used is—cheapness, and its adaptability for artistic effect. Iron or brass, on the other hand, may be made to give quite as artistic an appearance, and hence is very suitable. It is to be hoped, if legislation does take place as a result of the Committee at present sitting in the House of Commons, it will be on lines such that, if lamps are brought under inspection, the workmanship and manufacture may be of the best. It would also appear to be desirable that peripatetic vendors of oil should have due attention paid to them, which might be done by some simple means of registration.

Oil may be raised in temperature, and then gives off an inflammable vapour, and when it takes fire it does not do so quietly, but with somewhat concussive effect; thus the intervention of a gauge, after the manner of a safety lamp, is not efficacious, and it is only by a better pattern of lamp as regards safety, and the raising of the flashing-point, that the difficulty can be overcome.

I have endeavoured to carry out the Acts with courtesy, and at the same time to give advice where such has been necessary, and have met with uniform consideration from traders generally.

## THE DISEASED MEAT TRADE.

At Guildhall, on April 22, George Hedges Griffin, described as a pork butcher, of Wingrave, Buckinghamshire, was summoned before Mr. Alderman Samuel for sending to the Central Meat Market four quarters of beef, which were diseased and totally unfit for human food.—Mr. Vickery supported on behalf of the Commissioners of Sewers, and Mr. Moyses appeared for the defendant.—Mr. Owen Sharp, an inspector, deposed to seizing on the 4th inst. four quarters of beef at Gourrier's, in the Central Meat Market.—Dr. W. Sedgwick Saunders, medical officer of health for the City, stated that he had seen the meat in question. It was dark, congested, emitted a foul odour, parts were decomposed, and were without fat. The eating of it would be attended with great danger.—John Rogers, butcher, Wingrave, caused considerable amusement in consequence of the manner in which he gave his evidence. He said on March 28 last a cow was taken to his place by Mr. Elliott's labourer. It was dead, and its throat was cut. He dressed it as soon as he could. "Mr. Elliott, yer sees, leaves it to me to do the best as I can with anything he sends. Well, Griffin (defendant) comes to my shop and I speaks to him about this 'ere carcase, and I asked him ten shillin' a bit. You knows, a bit means a quarter. He (Griffin) says to me: 'No; y' u bate a half and I'll bate half.' He didn't make the bargin that day, but I sends my wife next day, and he had the meat for one sovereign."—By the Alderman: It were a bad colour. If it had been good meat the value would have been between £3 and £4. There was a great difference in the value of meat.—Charles Mead, a carrier between Wingrave and London, deposed that he took the meat for the defendant, who told him to ask Harry Thorne (a butcher at Gourrier's) to look at it before he took it in. Being late on the morning of April 4 he forgot the message, and handed in the four quarters without speaking to Thorne.—Other evidence having been given, Mr. Moyses contended that this was a matter more of carelessness than anything else. The defendant was a parish councillor at Wingrave, and in support of his respectability he produced letters from Mr. Leopold de Rothschild, the rector of the parish, and a justice of the peace. He also called witnesses who would speak to his character.—The Alderman said, but for the good character given to

the accused, he should have sent him to prison without the option of a fine. As it was, he would have to pay £100 or go to prison for a month.—Accused said he had only £50.—The Court then adjourned. At its reassembling, Mr. Moyses pointed out the difficulties of the Section of the Act which impose a fine of £50 on "each animal or article." Surely the word "article" referred to retail business, and this was not in any way connected with retail business.—Alderman Samuel said an appeal had been referred to, and as this was a costly matter, and would fall heavily on the defendant, he would reduce the fine to that of £50 and £3 3s. costs.

Messrs. Griffin Bros., of Manor and Vicarage Farms, Vale of Aylesbury, write that they are not connected with the defendant in this case.

At Birkenhead Police-court, on April 17, before Mr. George Atkin, Dr. Harris, and Mr. J. Craven, a butcher named William Lawton, of 64, Market-street, was summoned for having exposed for sale eleven pieces of beef and three pieces of mutton, which was unwholesome and unfit for human food. Mr. Fearnley, deputy Town Clerk, prosecuted, and stated that on March 27 the meat was seized by the meat inspector, and was subsequently condemned by a magistrate. Inspector Wagstaffe observed the meat as he was passing the defendant's shop, and on examination he found that it was stinking, green, and mouldy. Dr. Marsden, medical officer of health, deposed that he examined the meat in question. It was putrid, rotten, and stinking. Decomposition had set in, and it was totally unfit for food. Any person eating it would have been in danger of ptomaine poisoning. Defendant pleaded that the stuff seized consisted chiefly of fat and bones. He maintained that some portions of the meat were good. The Bench imposed a fine of £3 and costs.—William Smith, butcher, 166, Grange-road, was summoned for exposing 49 pieces of mutton and 24 pieces of beef which were unfit for food. Inspector Wagstaffe proved the seizure, which took place on March 25. Portions of the meat was behind the shop and out of sight. Dr. Marsden said that the meat was quite unfit for food, and its condition was palpable to anyone. Mr. F. S. Moore, for the defence, submitted that defendant had not taken sufficient care during bad keeping weather, but he had no intention of disposing of the meat for human food. A penalty of £10 and costs was imposed.

At Clerkenwell, on April 21, John Spencer, of 34, Derby-road, Ashby-de-la-Zouch, Leicester, was summoned before Mr. Bros, by Sanitary Inspector Billing, of the Holborn Board of Works, for depositing for sale, on January 22, at 111, Charterhouse-street, the premises of a meat salesman, four quarters of beef intended for human consumption, which were diseased and unfit for food.—Evidence was given by the Inspector and by Dr. Bond, medical officer of the Holborn district, that the meat was unsightly, smelt unpleasant, and was tuberculous.—Mr. Ricketts, for the defence, said Spencer sent the meat up, believing it to be fit for food. He was 70 years of age, and it was nothing more than an error of judgment on his part.—Mr. Bros imposed a fine of £5.—William Haynes, of Milton, Repton, near Burton-on-Trent, for a similar offence was also fined £5.

## MILK.

At Luton, on April 15, William King, of 10, Guildford-street, was summoned by Charles Wright, Inspector of Foods and Drugs, for selling milk which contained 26 per cent. of added water, on March 23.—Mr. Beck appeared to prosecute, and Mr. Lathom defended, and on behalf of defendant pleaded not guilty.—Mr. Beck, having stated the case, called David Peck, foreman in the Sanitary Department of the Corporation, who said he went to defendant's shop and asked for a pint of milk, which Mrs. King measured out. Mr. Wright entered the shop and took the jug with the milk in.—Charles Wright, Inspector under the Foods and Drugs Act, said he followed the last witness into the shop and got the milk, and then told Mrs. King it was for analytical purposes. The certificate of analysis stated that there was 74 per cent. of milk and 26 per cent. of water.—Defendant was fined £5 and costs £1 8s. 6d.

## MILK—A TECHNICAL OBJECTION.

At Dartford Petty Sessions, Walter Kelsey, dairyman, of Bexley, was summoned for selling a sample of milk to Mr. Chaney, one of the inspectors under the Food and Drugs Act, which was not of the nature, substance and quality demanded.—Defendant pleaded not guilty.—Mr. C. C. Ridley defended.—Mr. T. H. Morgan, chief inspector, handed in the certificate of the analyst to whom the milk had been submitted (the sale being admitted), and Dr. Adams certified that the sample was adulterated and deficient in cream to the extent of 16 per cent.—Mr. Ridley raised two objections, and contended that the summons must be dismissed. In the first place only the person who took the sample could prosecute, and Mr. Chaney was not present. In the second place they were summoned for selling milk not of the nature, substance and quality demanded. In the case of *Lane v. Colling* it was laid down that skim milk would satisfy this requirement. They had supplied milk, and the summons did not disclose any offence under the statute.—Mr. Morgan: We asked for pure new milk.—The Chairman: You must say that on the summons. We cannot go behind the decision in *Lane v. Colling*, and the summons will be dismissed.



## A DRASTIC FRENCH LAW.

If margarine were a deadly poison instead of a mild and bashful imitation of butter, the new measure which the French Deputies have recently passed could not have been a whit more severe, says the *Pall Mall Gazette*. The Bill which awaits the endorsement of the Senate, prohibits dealers in butter from keeping margarine on their premises—as if it were an explosive; while the margarine trader will have to be specially licensed to sell that compound, and will not be allowed to sell anything else. The punishments set down for any infringement of this Draconian law are sufficient to strike terror into the heart of the stoutest member of the Middlewick tribe in France. The penalties range from £4 to £200, and a fine and expansive system of imprisonment is also provided for the chastening of offenders, who are liable to be deprived of their liberty, equality, and fraternity for periods not less than six days, and not more than three months. From all which we may conclude that margarine is beginning to make itself more feared than respected on the Continent.

## FOOD PRESERVATIVES.

By R. T. THOMPSON, F.I.C.

(Concluded from page 191.)

THE case against boric acid can be most strongly argued in the case of children, who may take fully 8 grains per day in milk alone, and this quantity Sir Henry Thomson has no hesitation in strongly condemning when administered to children of even four years of age, which judgment can only be regarded as reasonable, as it is equal to nearly two "British Pharmacopœia" doses, and was about the amount which caused illness when daily given to dogs and rabbits. To those who have always questioned the real advantage of the use of preservatives, it is of interest to observe that at first boric acid was generally regarded as being quite safe, but, as time passed, the opponents of its use have increased in number, and at present the best authorities are averse to its addition to food.

*Benzoic Acid.*—This acid is obtained as light, white, needle-shaped crystals, which have a pungent, aromatic odour, and it cannot be employed in large proportion as a food preservative. From the results in Table II. it may be gathered that this chemical is practically on a level with boric acid in its effect on retarding the lactic fermentation of milk, but in Table I. the results are somewhat more favourable to benzoic acid. Of course, in such trials as these, it is scarcely possible to attain to absolutely constant results, as milks do not always ferment in precisely the same way, and an almost unobservable difference in conditions may account for slight differences. Although thus agreeing closely with boric acid in retarding lactic fermentation, it differs widely in its action on the alcoholic fermentation, as benzoic acid entirely prevents the latter, while boric acid only interferes with it to a very slight extent (see Table III.). Benzoic acid is non-poisonous, but its action physiologically has not been fully studied, although at present it seems to be regarded as harmless. This view, however, ought not to be accepted without full investigation of its properties.

*Benzoate of Soda.*—This compound is said to be about "one-third more efficacious" for the preservation of milk than benzoic acid, but the result of the trials recorded in Table II. point to the conclusion that boric acid, benzoic acid, and benzoate of soda are practically equal in this respect. From the results in Table II. it is evident that benzoate of soda favours the alcoholic fermentation of glucose very greatly, thus being totally different from benzoic acid. These are very decided and fresh proofs of the fact that one cannot forecast the action of any antiseptic under different circumstances from those in which the actual trials are made. Benzoate of soda is not poisonous, and it is recorded that as much as two ounces of it were given in one day to a patient suffering from acute rheumatism, but without any apparently injurious effect. Of course, it would be absurd to draw

conclusions from its administration in such very abnormal circumstances as to its harmlessness when taken in small doses in food regularly every day.

*Salicylic Acid.*—The "natural" salicylic acid is obtained in comparatively large clear crystals from oil of wintergreen, which consists mainly of salicylate of methyl. The "artificial" variety is manufactured from carbolic acid, and is produced in light, fine, silky, white needles, which at one time contained, and may occasionally yet contain, a few per cents. of poisonous cresotic acids, but when properly manufactured the artificial variety is quite as good as the natural acid. From Table II. it is quite apparent that salicylic acid is distinctly more powerful as a milk preservative than boric and benzoic acids, or benzoate of soda, and in a greater degree still than any other of the single preservatives yet dealt with in this paper. From Table I. it will be observed that salicylic acid, when used in the proportion of 35 grains to the gallon, preserves milk from souring as effectively as a mixture of  $17\frac{1}{2}$  grains of boric acid and 27 grains of borax, this mixture being equal to 35 grains of boric acid as obtained by analysis. It must be understood that in analysing milk for boric acid it is usually only the total amount that is determined, as it would be difficult to determine the amount of real borax present. In the proportions stated in Table III. it is apparent that salicylic acid, like fluoride of sodium and benzoic acid, totally prevents the fermentation of glucose by yeast, hence the value that has been put upon it for the preservation of wines and other solutions containing sugar. In the course of making analyses of foods I may mention that I have found salicylic acid in wines, lager beer, coffee extract, and in lemonade and other kinds of aerated water. With regard to salicylic acid, it may be noted in the first place that the "British Pharmacopœia" dose is from 5 to 30 grains, and the fact of its medicinal qualities is certainly an argument against its use as an antiseptic in foods which are consumed daily. As regards its action physiologically, several experimenters have condemned its use as an antiseptic for food preservation, and among these H. A. Weber and Leffman and Beam have shown "that a solution of 1 in 420 completely checked the salivary and pancreatic digestion of starch, and that even 1 in 840 had a marked depressing influence." Among those who have studied the question there appears to be a general consensus of opinion adverse to the use of salicylic acid as a food preservative.

*Salicylate of Soda.*—As will be observed from Table II., this salt is equal in milk-preserving power to salicylic acid; but, as in the parallel case of benzoate of soda, it stimulates fermentation by yeast very greatly, while the corresponding acid in each case entirely prevents it. Salicylate of soda is now also generally condemned as a preservative of food.

*Mercuric Chloride.*—Mercuric chloride, or, as it is generally called, corrosive sublimate, is a very poisonous compound—a dose of 3 grains per day taken by an adult causing poisoning. It has, therefore, never probably been actually added to food; but I had some time ago a case of a solution of corrosive sublimate in glycerine which was to be smeared over jam-pot covers before being used to close the pots. This would indeed be a very effective method of preventing the entrance of ferments into the jam; but even although the greatest care were taken according to instructions given with the solution, a quantity sufficient to cause serious symptoms of poisoning might very easily get into the jam. The results in Tables II. and III. show the great power of mercuric chloride in preventing the lactic fermentation of milk, as well as the alcoholic fermentation of sugar.

*Formic Aldehyde.*—This may be described as the most recently-introduced of food preservatives, although its antiseptic properties were first discovered fully ten years ago. Formic aldehyde is prepared from methyl alcohol



by passing the vapour of that substance, mixed with air, over a heated spiral of platinum wire, when the latter remains incandescent, and in its vicinity the methyl alcohol is converted by the oxygen of the air into formic aldehyde. On the large scale there may be used other substances in place of the platinum—such as a copper tube, oxidised copper gauze, or porous bodies (such as coke or retort carbon), these being heated in order to cause the oxidation of the methyl alcohol. The formic aldehyde vapour is led into water and there condensed, there being also retained traces of formic acid and methyl alcohol. Pure formic aldehyde has not been prepared, and can only be obtained in the water solution, which is sold as containing 40 per cent. of the pure substance, although considerably weaker articles are sold to milk dealers. Formic aldehyde is said not to be poisonous, but it is certainly very irritating to the eyes, nose, and throat, if some of the vapour is inhaled, or if a drop or two of the water solution is tasted. By referring to Tables I. and II. it will be observed that formic aldehyde is a very powerful preservative of milk, being four times as strong as a mixture of boric acid and borax or salicylic acid. Thus  $8\frac{3}{4}$  grains of the 40 per cent. formic aldehyde will keep one gallon of milk fresh as long as 35 grains of salicylic acid, or 35 grains of boric acid contained in a mixture of  $17\frac{1}{2}$  grains of boric acid and 27 grains of borax. It is stated by Rideal that one part of formic aldehyde (presumably the 40 per cent. solution) in 2,500 of wort, which is equal to 28 grains per gallon, altogether prevents alcoholic fermentation by yeast, but in Table III. it will be seen that 35 grains per gallon does not prevent this, although it very materially reduces the activity.

With regard to the physiological effects of formic aldehyde there appears to be little or nothing known, and we have in this antiseptic a good example of a chemical being employed for preservative purposes without having any competent knowledge as to its probable effects on the human organism, beyond the fact that it is not a poison in the ordinary acceptation of the term. It has been suggested that as formic aldehyde is volatile it will be expelled by the heat of the body when taken internally along with food, but such a statement is the merest theorising, as experiments which I made showed that in the case of milk one-third would have to be boiled off before all the formic aldehyde was expelled. It is therefore by no means volatile enough to be expelled at the low heat suggested. Rideal sees no objection to its use for the preservation of meat, probably because of its being expelled during cooking, as his reason that the quantity is too minute to be harmful cannot be considered as of any value in the present state of knowledge. As for its application to milk, it seems to me that the more powerful an antiseptic is, the greater should be the hesitation in recommending its employment as a food preservative, especially where there is no possibility of its being expelled before consumption.

*Peroxide of Hydrogen.*—The most common solution of this substance is known as 10-volume strength which refers to the volume of oxygen given off by one volume of the peroxide of hydrogen, but it only contains about 2 per cent. of the real chemical. In Table III. it will be found that 70 grains per gallon of pure peroxide of hydrogen, or 8 ounces of the 10-volume solution prevented the lactic fermentation of milk for three weeks, and from Table III. it is apparent that it also entirely prevented the fermentation of glucose solution by yeast. These results being entirely negative, it is impossible to say without further experiment what is the value of this as compared with other preservatives. Peroxide of hydrogen is said not to have any deleterious action physiologically, and Bert and Reynard come to the conclusion that it does not interfere with digestion. It does not exactly follow that because it does not

interfere with artificial digestion carried on outside of the animal, it will not cause any deterioration in health when consumed along with food. Hehner and other observers showed that boric acid had no effect on the artificial digestion of albumen, but Forster, as we have already seen in his experiments on the living animal, proved that it caused serious interference in this respect. Peroxide of hydrogen is certainly the one antiseptic that one would expect to be comparatively free from objectionable properties, but in these matters nothing whatever should be taken for granted.

This completes the results of the trials made with these preservatives and antiseptics, and I will now give in tabular form a comparative view of their power as regards milk preservation, taking the weakest of the series as 1:—

|                                                     |   |   |   |   |   |                |
|-----------------------------------------------------|---|---|---|---|---|----------------|
| Carbolic acid                                       | - | - | - | - | - | 1              |
| Cresylic acid                                       | - | - | - | - | - | 1              |
| Fluoride of sodium                                  | - | - | - | - | - | 1              |
| Borax                                               | - | - | - | - | - | 1              |
| Boric acid                                          | - | - | - | - | - | $1\frac{1}{2}$ |
| Benzoic acid                                        | - | - | - | - | - | $1\frac{1}{2}$ |
| Benzoate of soda                                    | - | - | - | - | - | $1\frac{1}{2}$ |
| Salicylic acid                                      | - | - | - | - | - | 2              |
| Salicylate of soda                                  | - | - | - | - | - | 2              |
| Mixture of borax and boric acid                     | - | - | - | - | - | 2              |
| Formic aldehyde or formalin (40 per cent. strength) | - | - | - | - | - | 8              |

These results show the relative power of each preservative, and the quantity of any preservative required to keep milk for a certain time can be calculated if we know how much of one of these is required to preserve it for the same time. Thus if 35 grains of borax are required to preserve one gallon of milk for two days, 23 grains of benzoic acid,  $17\frac{1}{2}$  grains of salicylic acid, or  $4\frac{3}{8}$  grains of the 40 per cent. formic aldehyde, will keep the same amount in good condition for the same length of time, and similarly with the other preservatives given on the tables. Of course, carbonate of soda has been eliminated from this list, as it can scarcely be classed as a preservative, and corrosive sublimate and peroxide of hydrogen are also excluded, as I have not yet obtained the necessary data to institute a comparison. In these trials even the pure milk kept well; but, of course, the temperature was low, and the time of year was probably also favourable to long preservation. Of course it is well known that milk sours more quickly in the summer and autumn months, partly owing to the greater heat then, but Dr. Vieth holds that it is not a mere matter of temperature, as the most troublesome months are October and November.

The preservative question is becoming daily of greater importance, and in various countries the addition of certain preservatives to foods has been made illegal. In Austria the addition of salicylic acid to wine, in Holland the addition of the same acid to beer, and in Italy and Spain the addition of any antiseptic to wine, is contrary to law. In France, also, the addition of salicylic acid to food is regarded as an adulteration, and in Germany foods containing boric acid must not be supplied to the navy; but in this country antiseptics can be added to foods almost with impunity. This state of affairs is extremely unsatisfactory, and surely a Government inquiry into the nature of the preservatives in use is not an unreasonable thing to ask. Perhaps the Food and Drugs Committee which sat recently, and which will probably sit during the present session of Parliament, will find a mode of dealing with this matter, as the use of all antiseptics which have not been proved to be entirely harmless physiologically ought to be regarded as illegal.



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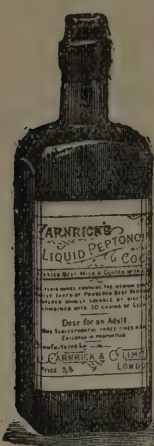
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By Order,

GEORGE B. NALDER,  
Town Clerk.

Municipal Offices, Southampton,  
22nd April, 1896.

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## Food and Sanitation.

SATURDAY, MAY 2ND, 1896.

### THE FARCE OF THE LONDON WATER COMPANIES' OFFICIAL ANALYSIS.

THE partially-filtered sewage and drainage which Londoners drink, under the delusion that they are drinking pure water, is one more glaring illustration of

the truth that there is no cause, nor is there any article too bad, to find "expert witness" defenders. Not very long ago Mr. Crookes ought to have fairly and squarely faced certain ugly facts about the accuracy of official water analysis—but he didn't, and now we have another "eminent expert" apologist for London water in a very tight place, and it is again due to Mr. C. E. Cassal that the public have an opportunity of estimating at their full worth the testimonials Mr. James Dewar, F.I.C., periodically gives the partially-filtered sewage and drainage he is concerned in eulogising as a pure article. In a report to the Kensington Vestry by Mr. C. E. Cassal, F.I.C., public analyst, that gentleman informs the Vestry that the results reported by the company's analyst—Professor Dewar—are not satisfactory in any respect.

Mr. Cassal says:—

A letter from the Chelsea Company states that the sample taken by the Company at the same time and place as that taken by the Vestry's Inspectors, has been analysed on behalf of the Company by Mr. James Dewar, F.I.C., whose report is submitted for the Vestry's information. This report contains certain analytical data; the more important ones—those, namely, which are directly indicative of organic pollution—being as follows:—

"Organic Carbon" 0.232 parts per 100,000.

"Organic Nitrogen" 0.029 parts per 100,000.

"Oxygen required" 0.049 grains per gallon.

The report also contains the following remarks:—"The results of the chemical analysis of the above sample of water are substantially identical with those of a sample of the Chelsea water taken on the same date at the Horse Guards, and published in last month's Water Report. Last month the bacteriological examination of the water supply by this company was good and the efficiency of the filtration quite satisfactory. Further comment is needless."

The corresponding sample taken by the Vestry's Inspector was condemned by me on the ground that the data indicative of organic contamination were very much higher than those which are yielded by the Thames-derived waters when these can be reported as being in fair condition, having regard to the source of supply and to existing circumstances; and I stated it as my opinion that the water at the point where the sample was taken was insufficiently purified, and, therefore, unfit for public supply and for drinking purposes. There is nothing whatever in Mr. Dewar's report to show that these statements were not perfectly correct, and the data in his report, so far as they go, afford a confirmation of the results and of the opinion stated in my report to your Vestry. The data indicative of organic pollution in Mr. Dewar's report are very high, higher than those frequently yielded by the unfiltered river water itself; no statement as to the presence of suspended matter is made, no microscopic examination is recorded, and no mention is made of the bad colour of the water; while the vague statement that the bacteriological examination of the water supplied by the Company during the month "was good" is of no importance in regard to the quality of the sample under consideration; and in the present state of bacteriological knowledge and methods of investigation, it would have been of very little importance in any case. The remark that the results of analysis of the sample were "substantially identical with those of a sample of the Chelsea water taken on the same date at the Horse Guards" even if correct, would not, in itself, prove anything in favour of the sample taken in Kensington; but it would appear that an error has been made in this matter, inasmuch as the results stated in the monthly report of the Companies' Analysts do not exhibit the "substantial identity" referred to. While the "Oxygen required" figure seems to have been the same, viz., 0.049 grains per gallon, the other data indicative of organic pollution were as under:—

Organic Carbon 0.163 parts per 100,000

Organic Nitrogen 0.021 parts per 100,000

and it is plain that these figures cannot possibly be regarded as "substantially identical" with those obtained by Mr



Enjoyed by Young and Old.

# BIRD'S CUSTARD POWDER

Provides not only delicious Custard, but an endless variety of delightful, dainty dishes.

**NO EGGS! NO TROUBLE! NO RISK!**

Dewar from the Kensington sample, which were 0.232 for Carbon and 0.029 for Nitrogen.

In view of all the facts stated I may be permitted to observe that it would have been more appropriate and accurate to terminate this report to the Companies with the remark "Comment is impossible," than the words, "Comment is needless."

A letter from the West Middlesex Company, dated 30th January, 1896, states that Mr. Dewar's analysis of, and report upon, the sample of water taken by the Company's servants at the same time and place as that taken by the Vestry's Inspectors do not agree with those of your Vestry's Analyst. An analytical report, similar to that forwarded by the Chelsea Company, was enclosed with the letter; the more important data being as follows:—

Organic Carbon 0.292 parts per 100,000.  
Organic Nitrogen 0.047 parts per 100,000.  
Oxygen required 0.076 grains per gallon.

The report also contains the following remarks: "The sample of water has substantially the same composition as the one taken on December 9, the results of which appeared in last month's Water Report. All the samples of London water taken last month gave satisfactory results, and this sample is no exception."

The corresponding sample taken by the Vestry's Inspectors was condemned by me upon precisely the same grounds as those upon which the Chelsea Company's sample was condemned; and, again, in this case there is nothing whatever in Mr. Dewar's report to show that the statements made by me with respect to the West Middlesex sample were not perfectly correct. The data in Mr. Dewar's report, so far as they go, afford full confirmation of the results and of the opinion stated in my report to your Vestry.

Similar remarks to those made under No. 1 apply also in this case. The data indicative of organic pollution in Mr. Dewar's report are very high—higher than those yielded by the unfiltered river water itself. The report by the Local Government Board Analyst upon the sample of water taken direct from the Thames on December 9, shows that it contained:—

Organic Carbon 0.254 parts per 100,000.  
Organic Nitrogen 0.054 parts per 100,000.

So that the organic carbon was actually lower in the unfiltered river water than in the West Middlesex Company's water taken in Kensington on the 24th December, and the organic nitrogen was not very much higher in the former than in the latter.

I am entirely unable to agree with the assertion that the results reported by the companies' analyst are satisfactory in any respect. The fact remains that insufficiently purified water, unfit for public supply and for drinking purposes, was obtained at certain points of delivery in Kensington on the 24th December last, and the documents put forward in defence, by the companies, not only fail to disprove this statement, but afford confirmatory evidence in support of it.—I am, Gentlemen, your obedient Servant,

CHARLES E. CASSAL, F.I.C.

We suspect, however, that Professor Dewar, like "Brer Rabbit," will lay low upon the question of answering this latest exposure of London's water supply.

It is truly pleasant to realise that Londoners are to be bled of something like twenty millions of pounds to benefit Professor Dewar's employers, who monopolise London's water supply, and sell this semi-filtered sewage and drainage to the public, and that an English Government should father the monstrous swindle and danger to public health.

## ALARMING NEWS FOR IRISH DAIRY FARMERS.

THE following extracts from the *Boletín Industrial* of Buenos Ayres will be read with something like consternation by the dairy farmers and butter merchants of Ireland; and the question immediately suggests itself, how can butter be made (with the small proportion of salt to suit the London trade) in a semi-tropical climate—such as that of the Argentine—of sufficiently good quality to keep fresh for a period of five or six weeks, the time usually occupied in transit and marketing the butter?

The only feasible answer that can be given is, by the liberal use of chemical preservatives. Now, it is hard lines enough for those who object to have their food drugged to be obliged quietly to submit—for it seems to be no one's business to try and prevent it—but it makes the dose all the more obnoxious to the British palate when one knows that every pound of foreign drugged butter we consume involves a serious loss to the home farmers, land owners, and the commercial community at large, and its importation to England aims directly at the extinction of one of Ireland's chief agricultural industries—viz., that of dairy farming and butter making, with its dependent great commercial interests of the butter trade and allied carrying enterprises.

The milk industry in the Argentine Republic to-day is, without doubt, one of the most flourishing industries in the country. This is almost entirely due to Mr. Vincent L. Casares, one of the wealthiest and best known *estancieros* in the Republic. Mr. Casares had to upset many obstacles in his way, and finally Argentine butter was introduced into the London and Brazilian markets.

Mr. Casares' example has borne good fruit, and more than one *estanciero* now believes his establishment to be incomplete without a dairy. Messrs. Goldkuhl and Brostrom, importers of dairy machinery, find it hard to answer all the inquiries for particulars as to the profits to be obtained by Europeans starting a dairy farm in this country.

The largest dairy in this country, "La Martona," in Cenuelas, belongs to Mr. Vicente Casares, and has three branches, one in Cenuelas, and the other in Tristan Suarez. One thousand three hundred kilos of butter are produced daily. Part of this is consumed in the country and the rest abroad. The butter is equal to any made in the best English dairy at home. Argentine butter has now a firm place in London and Brazilian markets.

The "Scandinavia Argentina" is another large establishment, and has three large factories. Two thousand three hundred kilos of butter are produced daily, equal to sixty-nine tons per month. Some of this is consumed here and the rest in England, Germany, and Brazil. The company exported 152,861 kilos of butter to London from September 6 to December 31. The company is preparing to set up further branches in other parts of the province of Buenos Ayres, and expects to be able to produce 6,000 kilos a day by April next. A large property has been purchased by this company in Calle Herrera, 1312, where the necessary preparations are being made to store 6,000 boxes of butter, equal to about 160,000 kilos.

Another important establishment is that of Mr.



Bottazzi, which has five branches, turning out 1,000 kilos of butter per diem. Among other establishments of a similar class are those belonging to F. Maton.

The butter industry was in a very low way during 1894, but now this state of affairs is changed by Mr. Frederick Stern's firm, which now exports the greater part of Argentine butter, exporting no less than 400 tons during the latter part of 1895. Mr. Stern has made contracts with La Martona, Escandinavia, and other establishments for receiving the whole of the butter produced by them. This gentleman is also in touch with the world-wide London firm of Ellis, Kislinburg, and Co., 3,000,000 pounds of butter passing through their hands. England imports 150,000 tons of butter annually, which represents a sum of £16,000,000. Mr. Stern expects to be able to export 120 tons of butter per month during the current year, increasing this to 300 tons a month next spring.

The last paragraph is an indication of what we have in store for us—a single shipper expecting to be able to export 3,600 tons in a year. The enormous area of good pastures and the low price of land in the Argentine give the people of that country great advantages in making butter at a low cost; and we need not grudge them these advantages if they will only season their butter with salt, be satisfied with exporting the heavy cured article, and not interfere with our trade in fresh and mild-cured butter. But we have no reason to hope that our South American friends will have any consideration for British farmers and consumers, and it seems to me that butter containing preservatives should be required to have stamped on it "borated butter," or its sale should be prohibited altogether on the grounds of injury to the health of the consumer. Now I can suggest a means which will have a considerable effect in getting this adulteration stopped—*i.e.*, let everyone interested drop a post-card to the Parliamentary representative of his district, calling attention to the subject of this letter; and I have no doubt something will be done ere long both in the interest of the consumer and dairy farmers of the United Kingdom.—BUTRYNN, in the *Farmers' Gazette*.

### THE ACTS IN IRELAND.

THERE appears to be an increasing interest shown in the suppression of adulteration in Ireland, many country districts now being regularly visited, and samples taken for analysis. A number of evidences of this gratifying activity have recently reached us.

Last week Sergeant Mount, Belturbet, summoned John Richardson, Tullynorth, Co. Leitrim, for refusing to sell a sample of butter.

Complainant deposed that on 19th March last he was taking samples of butter for analysis. Defendant refused to give one. Richardson—I gave him the butter, but refused the price. He stripped the butter and offered me 8d. per lb. I had it sold at 9½d. per lb. The Sergeant acted in a high-handed manner. Mr. McCarthy—You had better be sworn. Defendant was sworn, and repeated his statement, adding that the Sergeant offered 1s. for three "mugfuls."

Cross-examined by Sergeant Mount—I did not refuse a sample; I said if you would take the whole of it at market price or a roll I would give it; I had four rolls.

Complainant, in reply to the Court, said he asked for 18 ozs. from defendant, who distinctly refused to give a sample. In reply to complainant defendant stated that he did not recollect being asked for a sample six months ago.

Mr. Sewell, examined by defendant, deposed—I heard you ask the sergeant for his name. He said you would see it on the summons. The Chairman—I think there was a misunderstanding between you.

Fined 1s. and costs.

Sergeant Mount summoned Bernard Keirans, Tomkinroad, under the Act, and deposed that on the 24th of last month he purchased a sample of linseed meal from defendant for analysis. He (complainant) now produced certificate from Sir Charles Cameron which stated that half the sample was farinaceous matter, and that it was one of the worst specimens he had ever examined. Defendant—I bought it for linseed meal. Mr. McCarthy—Some other stuff must have got mixed with it. In reply to the Court the defendant stated that he bought it from a merchant in Belturbet. The Sergeant said that defendant was a small farmer and kept a shop. Fined 10s. and costs.

### THE VALUE OF WALTHAMSTOW'S HEALTH.

THE district councils occasionally afford some curious spectacles of the light in which public health questions are regarded by the average councillor. When Dr. St. Clair B. Shadwell was appointed Medical Officer of Health, Walthamstow had only about half its present population, and the salary was only £120. It was proposed by the Sanitary Committee recently to increase that meagre salary to £150, whereupon the following discussion ensued:—

Mr. Bedford proposed that clause 7 of the Sanitary Committee's report be accepted. This clause recommends that Dr. St. Clair B. Shadwell be re-appointed Medical Officer for the District, and his salary increased from £120 to £150 per annum. Mr. Cropley seconded.

Mr. McSheedy opposed on the ground that the Doctor had not asked for any increase and that the salary was large enough, especially considering that the holding of such a position must bring in a large private practice. This matter should be left until they were better able to afford it. At present the School Board had just applied for £8,000, which was a large increase on the application last half-year, and they ought not to run into this expense. He moved that it be referred back for consideration. Mr. James seconded.

Mr. Bedford believed in paying a fair rate of wages to all employees. When the doctor was appointed there were only 30,000 people in the district. Now the number was double that, but the doctor's salary had not been increased. The doctor had hinted that he wanted an increase. The expense would not be £30 per year, as the L.G.B. paid half. The increase meant about 6s. a week, and they had increased the wages of some of the workmen that much. Mr. Cropley thought it a mistake to allow a man to ask for an increase of salary. Many a good servant had been lost because his employer had not appreciated his services. But he had said that if the matter had not been mentioned he should have made an application. They were paying their workmen higher wages than any other district in London, and he did not see why they should pay their officers less.

Mr. Finch said this discussion was absurd about a matter of £15 a year. The rates had been raised by the sequestration order, among other things, and this could not be blamed on to the Local Board, as it was not made in their time. And it perhaps would never have been made only they took to interfering in other people's business, and then other people interfered in their business.

Mr. Roberts objected to any comparison being drawn between the salary of the doctor and that of their workmen. Twenty-six shillings a week was barely sufficient to keep a man who perhaps had a wife and five children. The doctor received £120 a year, and that was only a privilege, and served to increase his private practice.

Mr. Anderson pointed out that other medical officers in the town with twenty times as much work to do only received the same salary of £120. He referred to the parish officers. If the doctor was hard up and had not enough to pay for a carriage he should say, "Let us help him."

Mr. Urry wished for some more information, and until they got it he should vote that the matter be referred back to committee.

Mr. Good also took this view.

Mr. Bedford then, as there appeared to be a general wis-  
dom



to that effect, agreed to refer the question of increase back to committee.

It is bad policy of any local authority to underpay its public health officers. It causes the ablest men to transfer their skill and experience to more appreciative authorities, and in thus objecting to even slightly increase an altogether inadequate salary the objectors cannot be consulting Walthamstow's true interests. There is no better spent money than that given to public health, and this truth cannot be too often enunciated.

### THE VALUE OF MEATS AS FOODS.

By R. H. CHITTENDEN, PH.D.

Professor of Physiological Chemistry in Yale University.

UNDERSTANDING now that the main function of proteid foods is to supply the nitrogen needed by the body, we may ask, What advantages do meats possess as a source of this nitrogen? In answer, we may reply that they represent a concentrated form of proteid food, their nitrogen is readily available, they are easily digestible, they have an agreeable flavour, they add variety to our diet, they contain extractives which have an exhilarating and stimulating effect, they satisfy the pangs of hunger more completely and for a longer period than the vegetable proteids. These, and still other reasons, may be given as descriptive of the advantages belonging to animal foods, such as meats.

In meats, as already stated, the greater portion of the dry material is composed of proteid, whereas in the majority of vegetable foods the proteid material is associated with a large amount of starch and cellulose, the latter being particularly resistant to the action of the digestive juices. As a result, a large proportion of the vegetable proteid matter ingested is lost to the system owing to the inability of the body to utilise it. It is stated that as much as 17 per cent. of the proteid of vegetable foods is thus wasted owing to the resistance of the vegetable tissue to digestive action. With meats, on the other hand, only about 3 per cent. escapes digestion or is converted into insoluble forms incapable of passing into the blood. The digestion of vegetable foods is certainly a more complex process than the digestion of animal foods, as witness the greater extent of the alimentary canal, as well as its complicated structure, in herbivorous animals. It is also stated, on good authority, that those races who from their environment are forced to depend mainly upon vegetable foods for their sustenance gradually develop a greater length of alimentary canal than is common to ordinary man. Thus, the Japanese, although short in stature, have a greater length of intestine than the European races. Vegetable foods undergo comparatively little digestion in the stomach, but are especially acted upon in the intestines, whereas meats are rapidly digested in the stomach; absorption thus commences more rapidly and hence there is a readier response to the nutrient action of animal foods; they enter more quickly into the general circulation, so that their sustaining influence is more quickly felt.

Again, if a person is to derive the necessary proteid matter solely from vegetable food he must ordinarily consume a large bulk, first because as a rule the proteid matter is mixed with such a large amount of starch and cellulose, and secondly because such a large proportion of the contained proteid matter is unavailable owing to its peculiar environment of non-digestible, or difficultly digestible material. Hence, he must consume a large excess of such foods in order to obtain what he needs for the support of the body. With meats, on the other hand, it is quite different. Here, the proteid matter is readily and almost completely available and there is no necessity for engorgement of the alimentary tract. To be sure there are forms of

vegetable foods, as certain cereals and leguminous products, in which the content of proteid matter is large, and where, by judicious preparation, the material can be rendered easily digestible and more completely available. But, as a rule, the distinction holds good, and meats furnish us a form of concentrated proteid food admitting of ready utilisation by the body.

Furthermore, meats and animal foods in general, either from the peculiar forms of proteid matter they contain, or from the presence of other substances, lead to certain changes in the blood which are somewhat noticeable. Thus, the red blood-corpuscles are increased in number on such a diet, the fibrin of the blood is augmented, and there is an increase in the proportion of mineral salts, especially of phosphates. The muscles also appear to gain additional tone and to show greater firmness when meat is a part of the daily diet. Food rich in nitrogenous or proteid constituents undoubtedly promotes oxidation within the body, thus leading to a greater absorption of oxygen from the respiratory organs. There is thus less sluggishness in the system with a partial meat diet. And it is for this reason that an increase of meats or animal foods tends to counteract somewhat any tendency to obesity, since it leads to an increased oxidation of any fat deposited in the tissues. Vegetable foods, of all kinds, owing to the excess of starch they contain, tend to increase the fat of the body, whereas a food rich in proteid, such as meats, tends to increase muscle and bone, as well as to decrease the fat already deposited in the tissue. Herbivorous animals are especially prone to become fat when well fed, and carnivorous animals restricted as much as possible to a vegetable diet also tend to fatten. Hence, the omnivorous animal, man, may well take at least a portion of his proteid food in the form of meat with the assurance that by so doing he can avoid undue absorption of carbohydrate material.

There is a general tendency toward the belief that animal foods, particularly meats, favour more vigorous physical and mental development than vegetable foods; that a man can work to better advantage, physically and mentally, when the requisite proteids of his daily dietary are supplied in part in the form of meat. Whether this is to be attributed to any difference between the animal and vegetable proteids is doubtful; it may, perhaps, be due as much to the smaller proportion of proteid a man would probably consume on a vegetable diet, or to its lack of availability, etc.; or, again, the lack of nitrogenised extractives, which are so characteristic of meat may be an important factor. Quite probable it is to the combination of these several factors that we must look for the true explanation. However this may be, the difference unquestionably exists. Thus, Bécclard has recorded in his well-known book that "the workmen employed at the forges of Tarn were for a long period fed with vegetable substances. It was then found that all the workmen lost, on an average, fifteen days' work a year on account of exhaustion and illness. In 1883 M. Talabot, deputy of La Haute Vienne, took charge of the forges. Meat was then made an important part of the diet. The health of all the men afterwards improved so greatly that they did not lose more, on an average, than three days' labour a year. Animal food produced a gain on each man of twelve days' work a year.

"It has also been stated that the Italian labourers from Lombardy, with their largely vegetable dietary, performed much less work when engaged in piercing the St. Gothard Tunnel than their Swiss co-labourers with a more richly animalised scale of diet." Soldiers campaigning have likewise been observed to lose health and fall ready victims to scurvy and diarrhoea if they have been compelled to live on farinaceous foods solely. The great Haller submitted himself for many days to an exclusively vegetable diet, with the result that he found himself more muscularly feeble, and suffered from general



langour and a great disinclination to intellectual work; and we have been *authoritatively* informed that one of the most eminent of living philosophical writers restricted himself to vegetable food for three months, and then when he had read what he had written during that period he was so dissatisfied with the work that he burnt all the manuscript! On the other hand, it is undoubtedly true that for those whose labour is mainly mental and whose muscular exercise is inconsiderable, any great excess of nitrogenous food, either animal or vegetable, should be carefully avoided.

Another factor connected with the dietetic value of meats that merits careful consideration is the part played by the various extractives, especially the nitrogenised bodies such as creatin, creatinin, xanthin, hypoxanthin, carnin, carnic acid, etc., which are so prominent in the muscular tissue of all animals, and which give character to all so-called meat extracts. These latter are found to have a remarkable restorative action when the system has been exposed to great fatigue, and they unquestionably exert a marked influence upon the action of the heart. A meat extract has little or no real nutritive value, as it is practically devoid of proteid matter, but this stimulating or exciting action is quite noticeable. Now, obviously, these various bodies which give character to a meat extract are typical of meat itself and must be ingested with the meat, whether the latter is broiled, baked, or roasted. Their physiological action cannot be ignored on the ground that they are present in small amount, because such bodies are able to produce marked results even when taken into the system in minute traces. Witness, for example, the action of such kindred matters as are thrown into the blood from the suprarenal capsules, small glands sometimes known as supernumerary kidneys, which plainly manufacture some kind of extractive material, endowed with marvellous action upon the heart and upon general blood-pressure. Indeed, it may be questioned, since muscular tissue is so permeated by blood, whether this identical substance is not contained in meats of all kinds in small traces, and if so it is another factor to be taken into account in judging of the merits of meats as foods. Schäfer and Oliver, to whom we are mainly indebted for our knowledge of this suprarenal extractive, have found cause to believe that this substance in passing from the gland into the blood and thence distributed through the body is stored away in the skeletal muscles. If this is really true, it is plain that the muscular tissues, *i.e.*, the meat of animals, must contain some of this principle, and since the principle is not destroyed by moderate boiling with water, it follows that it may escape destruction by cooking. It is further not destroyed by the gastric juice, and as it is diffusible there would seem to be no reason why traces of the body may not find their way from the stomach into the blood, thus adding to our own supply of this stimulating material. According to Cybalski, the blood of the suprarenal vein normally contains the active principle of the gland in sufficient amount to produce marked physiological symptoms.

The suprarenal is one of those glands that until recently has been considered as devoid of any very marked physiological action, but, as we now know, in the medulla of the gland there is formed something which has a striking physiological effect upon the muscular tissue generally, and especially upon that of the heart and arteries. Its action is to increase the tone of all muscular tissue, and this result is produced mainly, if not entirely, by direct action. This action can be demonstrated in a negative way by simply removing the suprarenal capsules from an animal, when there is produced extreme weakness of the heart and of the muscular system generally, and great want of tone in the vascular system. Hence, it would appear that at least one of the functions of the suprarenal capsules is to produce a material which is added in some way to the blood, and the effect of which is to assist, by its direct action upon the various kinds of muscular

tissue, in maintaining that amount of tonic contraction which appears to be essential to the physiological activity of the tissue.

It must also be remembered that there are other so-called ductless glands in the animal body, such as the thyroid, which undoubtedly also manufacture certain products which find their way ultimately into the blood, and very likely traces of these may likewise be present in the muscular tissue, and hence become components of the "meat." These statements may be taken as an illustration of a principle which I believe worthy of some consideration, viz, that in satisfying the needs of the body for proteid foods with meats we derive certain advantages other than those associated simply with the proteid matter itself. Various extractives, active principles, etc., all endowed with more or less physiological properties, are likewise ingested, as a part of the meat, and add their effects, perhaps to aid in keeping up the tone and vitality of the organism. On the other hand, it is no more than proper to add that meat may carry some less desirable substances, as when the animals slaughtered are not in a healthy condition, but fortunately there is no country on the globe where the conditions are more favourable for the raising of sound and healthy meat than America.

Regarding the use of meats as food there are some interesting facts that may be profitably considered. Thus, it is stated that in western Europe among the easier classes one-fourth of their food consists of meat or fish, three-fourths being made up of vegetables and fruits. In Great Britain the proportion of meat used is considerably larger. In both countries, however, there is evidence of a steady increase in the consumption of meats. This increase, as Sir William Roberts says, is not due to any change of habits among the easier classes, but to an increasing use of meat among the working classes. "As wages improve, the diet of the working classes tends to become more and more assimilated to that of the easier classes. Among the latter it may be said that a state of equilibrium in regard to this point has been attained, or, at least, approached, and that meat constitutes as large a part of their dietary as it is likely to reach. But with the larger part of the population this is far from being the case. Meat is a dear form of food. In regard to proteid matter lean beef contains, roughly speaking, twice as much as wheat flour, but beef is about four times as dear as flour, so that you may estimate that proteids of animal source are about twice as costly as proteids of vegetable source." Yet, in spite of this fact, it is evident from the above statements that there is an instinctive desire on the part of the people, without any thought or reference to dietetic questions, for a certain amount of meat or animal proteid as a part of their daily diet; and as soon as there is money available for the purchase of such foods, they are quick to increase their consumption of this important food-stuff. The hard-working labourer is the man, above all others, who needs the full complement of proteid food, and he is adding to his own strength and prosperity, as well as of his children, when he is able to provide his family with a reasonable amount of animal proteid. But there is a lamentable amount of ignorance in regard to the nutritive value of proteid foods, especially those of animal origin, and coupled with this is an utter lack of appreciation of the real connection between nutritive value and cost. The cheapest food is that which supplies the most nutriment for the least money. The well-known maxim that "the best is the cheapest" is not true of foods, for the term "best" in this connection is ordinarily applied to that which has the finest appearance, the finest flavour, the most tender structure, etc., and does not necessarily imply that it is the most nutritious, healthful, or economical. Its high price is dependent solely upon its fine appearance or its rare flavour, the question of nutrition being a minor consideration. Thus, there is



no more nutriment in a pound of proteid from tender loin steak than in the same weight of proteid from the neck or shoulder, and yet note the great difference in the cost. To be sure, the tender loin is naturally more tender, has a little richer flavour, and makes a better appearance upon the table than a piece from the shoulder of the same animal, but it will not supply the body's needs one particle better than the coarse-grained meat from some other quarter.

The high-priced tender loin is simply a dietetic luxury, quite justifiable for the man who can afford it, as any other luxury may be, but not to be recommended on the ground that it is more nutritious. And yet many a hard-working man with the laudable desire to provide himself and family with a good and nutritious dietary, spends his hard-earned money in a reckless and foolish manner through his ignorance of the fact that the food sold at the highest price is not generally the cheapest. He thinks he must emulate his richer neighbour, and that to economise by buying anything inferior in quality or cheaper in price would be a sacrifice of both dignity and principle. This point has been well discussed in a recent bulletin issued by the United States Department of Agriculture on the nutritive value and costs of foods. "No one," boasts a coal labourer whose case was cited by Mr. Meriwether in illustration of this very point, "can say that I do not give my family the best of flour, the finest of sugar, the very best quality of meat." He paid 156 dollars a year for the nicest cuts of meat, which his wife had to cook before six in the morning or after half-past six at night, because she worked all day in a factory. When excellent butter was selling at 25 cents a pound he paid 29 cents for an extra quality. He spent only 108 dollars a year for clothing for his family of nine, and only 72 dollars a year for rent in a close tenement house, where they slept in rooms without windows or closets. He indulged in this extravagance in food when much less expensive food materials, such as regularly come upon the tables of men of wealth, would have been just as nutritious, just as wholesome, and in every way just as good, save in its gratification to pride and palate. He was committing an immense economic blunder. Like thousands of others, he did so without understanding at all that it was a blunder.

A great deal of this kind of folly, I fancy, is attributable to lack of knowledge of the art of cookery. The housewife, not knowing how to properly prepare the cheaper grades of meat so as to make them palatable and attractive, concludes that they are not as nutritious as the more tender and juicy cuts that can be bought at a higher price, and which require little judgment or skill to prepare for the table. Here is a field for missionary labour that will well repay the cultivation, and that it is being appreciated is fully demonstrated by the establishment of New England kitchens, schools of cookery, and other kindred institutions in our large cities. I fancy, too, that knowledge of this kind may be advantageously acquired by those whose means render it perhaps less vital; for a waste of food material is a crime against both pocket and morals.

In conclusion, allow me to say that in my judgment meats occupy a somewhat peculiar place in our category of dietetic articles. A close examination of the dietetic customs of civilised peoples show that two distinct objects are ever kept clearly in view, viz., the satisfying of the grosser needs of the body—the needs of general nutrition—and satisfying the needs of the higher functions of the central nervous system. Now meats plainly share with vegetables, fruits, dairy products, etc., the ability to minister to the former wants of the body, but in addition, as already stated, they have certain stimulating properties which distinguish them from the grosser vegetable foods. In this respect they might perhaps almost be classed with such articles as tea, coffee, etc., in their power of

ministering to the wants of the brain and nerves. As Sir William Roberts well says, "The struggle for existence—or rather, for a higher and better existence—among civilised men is almost exclusively a brain struggle: and these brain-foods, as they have been not inappropriately termed, must be regarded as a very important part of the equipment for that struggle. . . . If we compare, as best we may with our limited information, the general characteristics of the high-fed and low-fed classes and races, there is, I think, to be perceived a broad distinction between them. In regard to bodily strength and longevity the difference is inconsiderable; but in regard to mental qualities the distinction is marked. The high-fed classes and races display, on the whole, a richer vitality, more momentum and individuality of character, and a greater brain-power than their low-fed brethren; and they constitute the soil, or breeding-ground, out of which eminent men chiefly arise." A high standard of nutrition is the best adapted for bringing to full perfection the physical and mental qualities of the individual. The more subtle effects may not be visible at once, but when a certain type of nutrition has been acquired, and intensified by long continuance, handed down perhaps from generation to generation, it becomes an inherent part of the individual, and exercises an important influence upon his character. It is well understood that differences in mental capacity may be explained, in part at least, by differences in the type of nutrition of the brain-cells, and nutrition is unquestionably modified and influenced by the quality of the food consumed. Meats furnish to the body something more than the mere proteid matter contained therein, and the same may be true of all kinds of food, both animal and vegetable. I am aware that in making this statement I am wandering somewhat from the strictly physiological standpoint, but it is necessary to understand that there is a sort of intangible influence exerted over the body by the quality of the food consumed. To quote Sir William Roberts once more: "There are some very subtle and exceedingly curious relations between the quality of the food and the nutrition and vital habits of the body. They are profoundly difficult to understand, and yet are absolutely authentic and highly important. One would think that so long as an animal obtained his due quantity of proteids, carbohydrates, and fats, it did not matter much from what source they were obtained. But this is far from being the case. There are differences in effect, not only between animal and vegetable articles of food, but also between one kind of animal food and another, and between one kind of vegetable food and another. . . . Experience has taught trainers that the vital habits and qualities of horses and dogs are considerably modified by the nature of their food. The characteristics of each strain are transmitted by heredity, but in order that they may be maintained in perfection, the offspring must be fed with appropriate food. Trainers will tell you that the hunter and the draught-horse require to be fed differently. The hunter is bred and fed for speed and carrying power; the draught-horse for bulk and strength. In the hunter is wanted rapid liberation of energy within a comparatively short space of time; in the draught-horse is wanted a more gradual liberation of energy and for a longer period. To bring out their qualities, each strain must be fed appropriately. The hunter is fed on a concentrated and stimulating form of food—chiefly on the heaviest and most expensive oats—which, if I may so express it, is the 'beef' of the vegetable feeders; and, unless he is so fed, he will not perform satisfactorily in the hunting field. The draught horse is fed on a lower and less stimulating diet—on Indian corn and chopped hay—food which tends to increase bulk and weight. Slow-going sporting dogs—setters and harriers—are fed chiefly on oatmeal and weak broth, but the coursing greyhound is trained on



the very best of beef and mutton; and if these distinctions are not observed, neither kind comes up to its best performances." So with mankind, the nature and quality of the nutrient—aside from it containing the due proportion of the several requisite elements—exert a specific influence upon the character of mind and body, and meats may be fairly placed in the front rank of foods as giving important aid toward that higher physical and mental development which belongs to the civilisation of the nineteenth century.—*Dietetic and Hygienic Gazette*.

#### THE EFFECT OF HEAVIER FINES FOR ADULTERATION.

A CORRESPONDENT directs our attention to the gratifying fact that Birmingham magistrates are becoming alive to the necessity of inflicting heavier fines for adulteration. Several weeks ago, a man was fined £15, which resulted in a discontinuance of the fraud for some weeks; but the rogues have become bold again. Another lull in the practice may now be looked for. It is clear that by heavy punishments such frauds could be entirely put down, or very nearly so.

On April 24, Edward Thomas Mountford, 2, Bull Ring, provision dealer, appeared to answer three summonses charging him with not labelling margarine. Mr. Hiley, from the Town Clerk's office, prosecuted. Inspector Jones visited the defendant's premises and made purchases from three parcels, two of which bore no label, whilst the other bore the label, "Pick of the market." All the samples taken by the inspector proved to be margarine. Mr. Hiley stated that in 1894 defendant was fined for selling butter containing 100 per cent. of foreign fat, and he further stated that defendant, though not carrying on a large wholesale business in the proper sense of the word, sold considerable quantities of butter to small hucksters. The Bench fined defendant £10. and costs in each of the three cases. Defendant, who was allowed a week in which to pay the fines, said that a great many people were selling margarine for butter in the trade in Birmingham, and it was his opinion that whilst margarine was allowed to be made the colour of butter it would be sold under the cloak as long as the world stood.—Oliver Watson, 1 $\frac{1}{2}$ , Sun-street, was fined £5 and costs for not labelling margarine.

#### NATIONAL FOOD SUPPLY.

At a meeting of Unionist county members, held in one of the Committee-rooms of the House of Commons, on April 21, Sir John Dorrington presiding, the principal topic of discussion was the national food supply. On the motion of Mr. Yerburch a resolution urging the appointment of a committee of naval and military experts, together with gentlemen of experience in commerce and agriculture, to consider any schemes that may be submitted for the purpose of making this country in time of war independent of the foreigner for our food supplies was unanimously adopted.

#### A QUESTION OF ANALYSTS.

In the House of Commons, on April 24th, Lord Balcarras asked the Home Secretary whether his attention had been called to a case which came before the borough bench of Bury on the 6th of March, in which the bench refused to grant a summons to the purchaser of adulterated butter, on the ground that the samples had not been submitted to their borough analyst, but to a county analyst; whether he was aware that the town clerk of Bury appeared before the borough bench to oppose the granting of such summons on the same ground; whether the action of the pur-

chaser in relying on the analysis of a county analyst was regular; and whether a borough bench was justified in refusing to deal with a case of adulteration merely on the ground that the analysis had not been made by their borough analyst.

Sir M. Ridley: My attention was first called to this case by the question, but I have communicated with the borough justices, and understand that the facts are as stated in the first two paragraphs. The purchaser subsequently produced a certificate from the borough analyst, and obtained the summons. Whether the magistrates were justified in their action depends on the construction which should be placed on certain sections of the Sale of Food and Drugs Act, 1875. That is a question which can only be authoritatively decided by the court, and on which, therefore, I must decline to express an opinion.

#### ROTHERHITHE VESTRY AND ADULTERATION.

THE public analyst reported that 22 of the 26 samples of food and drugs analysed during the quarter ending March 31 were genuine. These figures showed a very marked improvement in the food supply, the percentage of impurity having fallen from 35 in the corresponding quarter of last year to 13·3.

#### THE MANSFIELD POISONINGS.

THE strange illness of two or three hundred persons in Mansfield and neighbourhood during February has been traced to some potted meat.

The Nottingham Borough Analyst, to whom a sample was sent, says that upon chemical examination it showed traces of lead, and of "ptomaines."

#### DERBYSHIRE COUNTY COUNCIL AND THE ADULTERATION OF FOODS.

At the last meeting of the Council a communication was read from a meeting of the proposed Farmers' Co-operative Association, held at Manchester, when it was recommended that the County Councils of Lancashire, Cheshire, Derbyshire, and Yorkshire should co-operate with a view to enforcing in their districts the Adulteration of Foods Act.

On the motion of Mr. Fowler the matter was referred to the Weights and Measures Committee.

#### HOW SAVELOYS ARE MADE.

MR. E. J. BEVAN, the analyst for the county of Middlesex, in his annual report, says: "One sample of saveloys was found to consist of 45 parts of water, 9 parts of lean meat, 22 parts of fat, and 21 parts of bread, the whole being coloured with oxide of iron."

#### STOKE NEWINGTON VESTRY.

##### A LAUGHING STOCK.

At the last meeting Mr. Shaw asked how it was the Vestry was ordered to pay £3 3s. costs in the case *re* Ford for alleged adulteration.



Mr. Eve explained that Mr. Ford was summoned for selling coffee which their analyst stated was considerably adulterated. On being analysed for the court it was found to contain no adulteration, and the Vestry were ordered to pay the costs. The medical officer, in order to satisfy himself, sent the sample to an eminent analyst, but his report had not yet been received.

Mr. Shaw said he would like to see the matter put right, because the Vestry had been made a laughing stock in all the trade journals.

### THE SANITARY INSPECTORS' ASSOCIATION.

THE members of the Association have been invited to view the elaborate sanitary system at the Hotel Cecil on Saturday, May 2. The members meet in the court-yard (Strand entrance) at 2.30 p.m., and will be shown over the hotel by Mr. H. Carter, C.E., under whose supervision the work has been carried out.

### MILK.

At Dorchester last week, Henry C. Hobby, an assistant to Mr. Virgin, of Burton Dairy, was summoned for selling milk which had not the proper proportion of cream.—Superintendent Devenish stated that he saw Mr. Virgin and his assistant, Hobby, hawking milk. He asked Hobby for a pint of new milk, which was supplied him. The report of the analyst was to the effect that there had been an abstraction of fat from the milk to the extent of 25 per cent.—Mr. Huxtable's defence was that a portion of the milk sold was the "fore" milk (milk taken first from the cows in the morning), and that it was naturally more deficient in cream than milk taken from the cows subsequently.—Dr. Day, in evidence for the defence, stated that he agreed with the public analyst, but explained that the first milk taken from a cow was more deficient in fat than that taken afterwards.—The Bench decided to convict, and fined the defendant £1 and costs. The analyst's fee was also allowed.

At Kidderminster, on April 24, James Tilsley, Franche, was charged with having sold milk from which the cream had been extracted. There were two charges, the one alleging that 10 per cent. of cream, and the other that 50 per cent. of cream had been extracted. The Town Clerk prosecuted, and Mr. H. Ivens defended. The defence was that the milk was sold as old milk, and that it had been scalded so that it would keep.—The Town Clerk said the samples were taken on successive mornings, and on the second day the sample was the worst.—Defendant was fined 5s. and costs in the first case, and 20s. and costs in the second.

### A FRANK ADMISSION.

At Thames, on April 22, Thomas Holmes, milk-seller, of Wilson-street, Mile End, was summoned for selling milk adulterated with 35 per cent. of water. The defendant said he sold two classes of milk—2d. and 4d. On account of the opposition he had to put water with the former. Mr. Mead said he would have to pay £10, or, in default of distress, would be imprisoned for 14 days. The defendant showed great surprise at the decision.

### SCANDALOUS PROCEEDINGS IN THE MILK TRADE.

THOMAS LAWSON, milk dealer, of Copperas-hill, and John Burns, a youth employed by him, were charged at the Liverpool Police-court, on April 23, before Messrs. Joshua Sing and H. Peet, the latter with wilfully damaging two quarts of milk, and the first-named with aiding and abetting him.—Mr. John Sefton, who conducted the case for the prosecution, said that on the morning of March 25 Samuel Millikin, farmer and milk dealer, who lives in West Derby, left a can containing two quarts of milk at the door of the Cock Inn, London-road, Mrs. Keith, the tenant, being one of his customers. He drove away in his trap, and a minute or two later the defendants arrived at the same place in a vehicle. It was alleged that Burns jumped out, picked up the can which had been left by Millikin, took it away, and then a minute or two later returned and replaced it on the doorstep.

Mrs. Keith stated that on the morning referred to there were complaints made regarding the taste of the milk, her husband, one of the waitresses, and the cook stating that after drinking it they felt sick. They said it tasted like bad buttermilk.

William Sloan, sub-manager of the firm of Ray and Miles, London-road, stated that he saw the defendants drive to London-road. Burns jumped out of the vehicle, took the can from the door of the Clock Inn, and went up Camden-street. He deposited the can on the doorstep after being away about three minutes.

Mr. Herbert E. Davies, analytical chemist, stated that the milk was sent to him to be examined, and he found that it had 28 parts of water to every 72 parts of milk, with one per cent. of salt.

The defendants denied having meddled with the milk, but the bench considered the case proved, and inflicted a fine of 20s. and costs, with £1 is. extra costs upon Lawson, and ordered Burns to pay a fine of 5s. and costs.

At Reading, on April 24, Edward Wright, of 17, Cross-street, was charged with selling milk below the substance and quality demanded by the purchaser under the Food and Drugs Act, of 1875.

—Mr. H. Day (Town Clerk) appeared for the prosecution, and the defendant was represented by Mr. Shaw.—Mr. William Hy. Robertson, Inspector of Nuisances, said that about 10.15 a.m. on March 30, he called at defendant's shop in Cross-street and asked for one pennyworth of new milk, which was supplied him by defendant.

Witness then informed Wright that he intended to take it to the public analyst, and, after dividing the milk into three portions, handed one to Mr. Wright, the second to the public analyst and kept one himself. On April 4, witness received a certificate from Dr. Ashby, which stated that the sample contained 90 parts of milk and ten parts of added water.—Cross-examined by Mr. Shaw: The milk from which the sample was taken was served from an ordinary vessel placed on the counter. It was correct that quality of milk varied, but witness was not an authority on that point.—Dr. Ashby, public analyst, said that the use of a lactometer was perfectly useless in testing the quality of milk.—The defendant, in answer to the summons, said that he dealt in milk in a small way for the purpose of obliging a few customers. On March 30th, Mr. Davis, from whom he bought the milk, arrived at 7.45 a.m. and twenty minutes later the inspector visited his shop and purchased one pennyworth. When informed that the milk was required for analysis, witness produced a lactometer and by that means satisfied himself that the milk was of a proper quality. Witness did not touch or tamper with the milk in any way.—Wm. Davis, of George-street, spoke to supplying the defendant with milk, and on the morning in question he delivered it himself.—The Chairman said that the defendant had pleaded guilty and it was only a question of degree.—A fine of 20s. and costs would be inflicted.

### UN SOUND MEAT.

#### A DEFENDANT SENT TO GAOL.

At the Guildhall, London, on April 24, George Hunt, dealer in live and dead cattle, living near the Barracks, Devizes, Wilts, was summoned for sending eight pieces of diseased meat to the Central London Markets, intending it for sale as human food.—Mr. Vickery prosecuted on behalf of the Commissioners of Sewers, and stated that the eight pieces of meat consisted of four quarters of beef, and the head, tongue, tail, and heart of a cow which had suffered from lung disease. The defendant advertised himself as a dealer in live and dead cattle, and added to his advertisement were the words: "Farmers, please note that G. Hunt takes all responsibility of all cattle entrusted to him." In consequence of this advertisement, a farmer named Pottinger, who had a cow that had for some time been ill, sent for the defendant to take away the animal. No price was paid, expected, or mentioned. The defendant took the animal away, had it dressed in the usual way, and sent to London for sale as human food. It was seized almost immediately it was deposited in the market, brought to this court, and condemned by Mr. Alderman Faudel Phillips. He (Mr. Vickery) could not help thinking that this was such a bad case that it required some very severe punishment. Inspector Owen Sharp having given evidence as to the seizure of the meat, Dr. W. Sedgwick Saunders (Medical Officer of Health) said that the meat which was submitted to him was in a very bad state. The inside was simply covered with tubercles, and the eating of such meat would be highly dangerous to health. Any person seeing the meat could tell that it was thoroughly unfit for food. Superintendent Baldwin, Deputy Chief Constable for Wilts, gave evidence as to the serving of the condemnation note upon the defendant, who when asked if that referred to the cow he had had from Mr. Pottinger, said, "Yes, but I take all responsibility." Mr. Walter Beard, who represented the defendant, said that his client's explanation was that when he dressed the meat it appeared good, and he therefore sent it to London. The defendant was a man with a family, and he hoped his worship would give him the option of a fine. Superintendent Baldwin proved previous convictions against him. Mr. Alderman Samuels said there was no defence whatever. It was one of the worst cases that had ever been before the court, and he could not pass a less sentence than three months' hard labour.

At Birkenhead, before Messrs. J. Craven and T. L. Dodds, William Heathcock, butcher, 32, Market-street, Birkenhead, was summoned for exposing for sale at his shop in New Chester-road



Tranmere, two pieces of beef and one piece of liver which were unfit for human food. Inspector Wagstaffe proved the seizure of the meat on the 11th instant, and Mr. James T. Thompson, for the defendant, denied that the meat was exposed for sale. It was concealed behind a door, where it had been placed until it could be removed to the dogs' home, where scraps of meat were sent frequently. The manager of the shop gave evidence bearing out this statement and with regard to the liver, said this was apparently quite good, and had been purchased at the full price charged at the lairage. In fact, there was a general impression among butchers that lairage meat could be depended upon as free from disease. The bench considered the charge proved, and imposed a fine of 20s. and costs, but exonerated Mr. Heathcock from any blame in the matter.

### WHOLESALE SEIZURE OF ALLEGED UNSOUND FOOD.

DR. TAYLOR, medical officer of health, and Mr. James Twaites, sanitary inspector for the vestry of Mile End, applied on April 22 to Mr. Mead for an order to condemn the following articles of tinned food, which they had seized that day at a shop in the Whitechapel-road, and which they allege were unsound and unfit for the food of man:—357 tins of tomatoes, 237 tins of apples, 64 tins of apricots, 18 tins of damsons, 183 tins of American corn, 72 tins of peas, 13 tins of beans, 11 tins of soup, 17 tins of salmon, 256 tins of lobster, 11 tins of sardines, 15 tins of oysters, 3 tins of haddocks, 10 ox tongues, 54 lunch tongues, 14 tins of cherries, 76 tins of beef, 5 tins of herrings, 5 tins of greengages, 3 tins of rabbit, and 4 tins of asparagus. The whole was brought to the court in two vans, and weighed two and a-half tons.—Mr. Mead having examined the tins, Dr. Taylor said that altogether he seized 1,528 tins of meat, fruit, and vegetables, all of which were unsound. He seized the tins at 188, Whitechapel-road, and they were altogether in a room at the back of the shop. He believed they were deposited for the purpose of sale, and he asked for an order for their destruction. The shop was an eating house.—Mr. Mead granted the application.

### LIVERPOOL AND THE FOOD AND DRUGS ACT.

MATTHEW DARTINGTON, Plasgolborne, Ruabon, was fined 40s. and costs for giving a false warranty for milk. It was stated that some milk the defendant had supplied to a Liverpool dealer was found to have been adulterated with water—seven parts to every 100 parts of milk. Defendant gave a warranty to the effect that the milk was new milk.—Henry Robinson, milk-dealer, Wilfer-street, was fined £3 and costs for selling milk adulterated with water.—William Jones, druggist, Berry-street, was summoned for supplying medicine not of the nature and substance demanded. Arthur Gregory said he visited the defendant's druggist's shop on the 24th of March, and handed a prescription to the defendant, and asked him to make up the medicine according to the prescription produced. He returned after some little time, and received the bottle, which he handed to Inspector Baker. An analysis was made of the medicine, and it was found deficient in strength, as regarded one ingredient one-half, and one-fifth as regarded another. A fine was inflicted of 40s. and costs.—Catherine Kenny, occupier of a stall in St. John's Market, was fined 10s. and costs for exposing for sale two fowls which were unfit for human food.

### ADULTERATION IN DERBYSHIRE.

MR. JOHN WHITE, County Analyst, reports that during the quarter ending March 16, 246 samples of food and drugs have been submitted to him for analysis, as follows:—

60 by Captain Sandys, 62 by Colonel Shortt, 62 by Mr. Shortt, and 62 by Inspector Hewitt.

The samples represented the following articles:—Milk, 31; butter, 56; lard, 9; cheese, 1; coffee, 32; oatmeal, 14; mustard, 12; pepper, 9; Demerara sugar, 3; arrowroot, 2; ground ginger, 7; ground rice, 3; malt vinegar, 6; whisky, 28; rum, 16; gin, 6; brandy, 3; cream of tartar, 4; tartaric acid, 2; tincture of rhubarb, 2.

Only four samples of milk could be condemned, three being each deficient of 10 per cent. of their natural fat, while another had received an addition of 5 per cent. of water. Neither of these were considered sufficiently serious examples of adulteration to warrant proceedings being taken. Two further samples were best described as of poor quality. These results show a marked improvement when compared with those yielded by the milk samples in previous quarters.

Three of the fifty-six samples of butter proved to be adulterated. In one sample 60 per cent., and in a second 85 per cent., of the fat present was foreign to butter; the third sample certified to be adulterated, contained no foreign fat, but was another specimen of a butter containing an excess of water, viz., 19 per cent. Although the proportion of adulterated samples is very small, it is none the less worthy of consideration, and the conclusions to be drawn are significant and important. These results show that the fraudulent sale of margarine as butter in the county has not ceased, while they also show that over-watered butter can still be purchased. These are phases of adulteration which particularly affect the pockets of the working classes, and in addition they subject the farmer and the honest tradesman to unjust competition. In support of the opinion I

have previously expressed, that 16 per cent. is the maximum amount of water that can be permitted in butter under any circumstances, I may state that, with the exception of the sample already referred to, the highest percentage I found during the quarter was 15; two other samples contained respectively 14 and 13 per cent., the remainder all containing less than 12 per cent. At the hearing of the summons in respect of this sample of watered butter, which was stated to have come from Hamburg and to have been made in Germany, the solicitor for the defence cross-examined me at some length as to the proportion of water normally found in butter, touching upon the points and using the arguments which would naturally suggest themselves to the mind of an advocate. I am glad to say that we were able to satisfy the Bench that an offence against the provisions of the Act had been committed, and a small fine was inflicted. The Chairman of the Magistrates stated that as this was the first case of the kind in the district, the penalty would be light; he intimated, however, that in future similar cases they would be more severe.

This case affords another illustration of the improper competition the British Dairy Farmer has to meet; this is the second sample of German butter I have found to contain an excessive amount of water, while a return made by the Board of Agriculture shows that foreign butter is adulterated to a considerable extent. This was ascertained by submitting samples to analysis which had been taken from various consignments by the Customs Officials at the different home ports.

Two samples of coffee were adulterated with chicory to the extent of 10 per cent. in the one, and 45 per cent. in the other.

One sample of mustard was adulterated with 10 per cent. of wheat starch, together with a little turmeric added to bring back the colour of the mixture.

One sample of ground ginger contained about 5 per cent. of extraneous mineral matter, which was found to consist of carbonate of lime. This deserves some notice, for though it can hardly be considered an instance of adulteration, the sample must certainly be described as impure. It is stated that in some countries where ginger is grown it is the custom to whitewash it during growth. This I believe is perfectly true, though whether the treatment is necessary or not I am unable to say. The effect would be that the lime contained in the whitewash would, upon exposure to the air, be converted into carbonate; hence the presence of this substance in my sample.

One of the samples sold as malt vinegar was incorrectly described, as it consisted of dilute acetic acid, coloured and flavoured. Malt vinegar should be made by the acetification of a fermented infusion of malt, or a mixture of malt and grain. The sample in question did not possess the characters of malt vinegar, and I accordingly certified to this effect.

Ten samples of spirits, viz., 7 of whisky, 2 of gin, and 1 of rum, proved to be of lower strength than is demanded by the Act of 1879. I would here call attention to a fact that is frequently lost sight of, that, except in the case of spirits, no standards are laid down for any articles of food or drugs by either the 1875 or the 1879 Act. The standards used are the outcome of the work and observations of public analysts generally. The amount of water added in excess of that required to reduce the spirits to the strength formulated by the Act varied from 2 to 31 per cent. The maximum of 31 per cent. had been added to a sample of rum, while other extremely gross examples of fraud, were two samples of whisky containing respectively 22 and 27 per cent. of excess water. Thus the purchaser would be defrauded of from 2½d. to nearly 4d. out of each shilling expended by him in these spirits, and even after making this allowance, he would only be getting a spirit of the lowest legal strength.

The samples of lard, cheese, oatmeal, pepper, sugar, arrowroot, ground rice, cream of tartar, tartaric acid, and tincture of rhubarb were all genuine, and the samples of brandy were of proper strength.

The total number of samples adulterated was 22, giving a percentage of 8.9 as compared with 6.9 for the previous quarter.

### HOLLAND COUNTY COUNCIL.

#### THE ANALYST'S REPORT.

THE County Analyst (Mr. C. H. Southwell, of Boston), in his quarterly report, stated that 20 samples had been submitted for analysis during the quarter, of which two (one of whisky and one of sweets) were adulterated. The analyst stated that the composition of the sweets was very inferior, but might not have been actually injurious to health. The sample was adulterated with 65 of raw starch, and was principally composed of glucose. Of the other samples, three of milk were spoken of as very poor, and three of ale were badly brewed.

### BATTERSEA ADULTERATORS.

THE following fines were inflicted last week on defendants for infringing the Food and Drugs Act. Mr. W. W. Young prosecuted for the Battersea Vestry:—

A. J. Bridgewater, 175, Plough-road, Battersea, £3 12s. 6d., for selling coffee adulterated with 55 per cent. of chicory.

Cnas. C. Upton, of 19, York-road, £3 12s. 6d., for selling milk from which 40 per cent. of original fat had been abstracted.

Wm. Sanders, of 332, Battersea Park-road, £2 12s. 6d., for selling milk from which 25 per cent. of original fat had been abstracted.



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# Food & Sanitation

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M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad Typhoid Fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

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The following is extracted from "THE ANALYST" for March, 1893.

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Member of the Society of Public Analysts, the Company's Resident Analyst.

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## Food and Sanitation.

SATURDAY, MAY 9TH, 1896.

### PROTECTING THE FOOD OF THE POOR.

It is a fact too often lost sight of that the rich, so far as their meat supply goes, can always count on being supplied with sound meat. Their orders are for larger quantities and are more regular. Their custom is one

that shop-keepers are anxious to retain, and, as they demand the best cuts, they, of course, pay the best prices. But the poor, whose meagre earnings enable them to buy, at the most, the "twopenny and three-penny bits," parings from Dives' joint, wander from place to place, seeking bulk and cheapness. It is to Lazarus that such abominations as the 1,528 tins of trash seized last week at Mile-End by the medical officer and sanitary inspector are sold, and if the author of "How the Poor Live" were to print another edition of his book he might note the fact that the keepers of cheap stalls and eating-houses know well that certain classes of their customers have become so habituated to refuse meats that they have lost the senses of smell and taste. Fortunately for such, every day sees increased vigilance on the part of sanitary authorities in suppressing the sale of unsound meat and adulterated food. Birmingham especially is very vigilant, and last week the following cases were brought before local magistrates:—

Walter Cook Tibbits, 102, Wheeler-street, butcher, was summoned for exposing, on March 24, a quantity of veal unfit for human food, and also for depositing at the rear of 100, Wheeler-street, three carcasses of veal, which were unfit for food.—Mr. Hiley prosecuted, and Mr. P. Baker defended.—The offences were admitted.—Inspector Wiltshire said he visited defendant's shop and saw several joints of veal, which he seized as being unfit for food. The meat was condemned, and ordered to be destroyed by Mr. Wilders. In all there was about 42lb. of meat.—Dr. Hill said that the meat was decomposed, and entirely unfit for human food.—In the second case, Inspector Wiltshire said he found three carcasses of veal in a storehouse at the back of 100, which was a shop rented by defendant. The meat was black and yellow in colour, and was covered with slime. It was what was called in the trade "Jumbo veal," and was foreign meat. When witness seized this meat, defendant said, "I did not know it was unfit for human food;" and, later on, he said, "Make it as light as you can this time; I will see to you afterwards." Dr. Hill deposed that the meat was unfit for food. Inspector Wiltshire said that defendant had been cautioned previously. Mr. Fisher said the bench failed to see any redeeming feature in the case. Defendant was in a large way of business, and evidently made large profits. A fine of £20 and costs was imposed in each case, or two months' imprisonment.—Alexander Hopkins, 62, Lancaster-street, butcher, was summoned for exposing for sale one beeve's heart, eight pieces of beef, and a quantity of small pieces of meat which were unfit for human food. Mr. Hiley (Assistant Town Clerk) prosecuted.—Inspector Wiltshire stated that he visited defendant's shop on March 21st, and found the meat specified in the shop mixed with other meat. He seized a quantity, which was condemned and afterwards destroyed. The meat was in a very bad condition, and offensive in smell.—Dr. Alfred Hill stated that the



meat was unfit for human food; it was green from mould, showing decomposition had set in some time.—Mr. Fisher: What would be the effect on people eating this meat?—Dr. Hill: It would most likely produce disorder of the digestive organs and might lead to more serious blood poisoning.—Defendant called an assistant named Thompson, who stated that he had charge of the shop when Inspector Wiltshire visited it. Defendant had given witness instructions to put all bad meat under the counter, and not to sell any of it. The meat was hung up because there were rats about the shop.—Mr. Fisher: What do you do with the bad meat? Witness: I sell it for dog meat; a man calls every other day.—Mr. Fisher: This bad meat was hanging up with the healthy meat? Witness: Yes.—Mr. Fisher: When the people come in, do you give them a little from one heap and a little from another? Witness: No.—Mr. Fisher: Why did you not put this bad meat under the counter? Witness: Because the rats pull it about.—Mr. Fisher: Oh, it is only fit for rats.—Inspector Wiltshire, recalled, said that the trade carried on at the shop was of a cheap character—chiefly twopenny and threepenny bits. In addition defendant had two other shops. He had previously been cautioned.—Mr. Fisher said it was a shocking thing to palm off that horrid, filthy stuff on to poor people for food.—A fine of £10 and costs was imposed.

When we urge the need of more Sanitary Inspectors, and that their appointments should be permanent ones, involving the sanction of the Local Government Board before dismissal can take place, it is because we are certain that, to stop these plunderings and poisonings of the poor, and to really battle against insanitary conditions, as the fight should be fought, there is scarcely a Vestry, Town Council, or Local Board in the kingdom that has a really adequate staff of inspectors, and that there are scores where Jerry Builder, Esq., and Slum Property Owner, Esq., would secure the prompt dismissal of any zealous officer who questioned their right to poison their tenants' air and spread disease for dividends. The aim of the sanitarian is to make the conditions of life such that only deaths from accident and old age shall figure in the mortality returns. By purer food, healthier homes, parks, open spaces, etc., we are slowly but surely reducing the death-rate, and this diminution of sickness and misery means a saving of millions of money to the community. Our mighty Press could do much to assist this really patriotic work, but we look in vain for one gleam of intelligence in our daily drivellers and chroniclers of charlatans, German pauper princelets, snobocracy-cant and religious impostors. It is a curious sign of the utter worthlessness of the Press that there should be to-day only one newspaper in England, viz., *Reynolds*, giving regularly any real attention to the people's food and their health. Upon its politics people may differ. For our part we wouldn't waste a cheer or walk one yard for any politician living, for a lengthened experience of scores of them has convinced us that they are all "on

the make." If they were not the House of Commons would contain a few men who would press forward sanitary questions. It is a bitter satire on the Press of England that it can devote columns to tittle-tattle about society butterflies, and be blind to questions of real importance to the public.

#### TO HOCUS THE SELECT COMMITTEE ON MINERAL OILS.

THE American oil scoundrels are moving to protect their liberty to roast alive an English person daily, and as they have "nobbled" the mineral oil section of the London Chamber of Commerce they will present their evidence through that body.

A meeting of the Joint Executive of the Petroleum Defence Committee and of the Mineral Oil Section of the London Chamber of Commerce appointed in special reference to this inquiry was held on April 13. A lengthy discussion took place with regard to the scope of the resumed inquiry, and preliminary arrangements were made for the collection of evidence, on behalf of the several branches of the trade affected, for submission to the Select Committee of the House of Commons.

The House of Commons Committee ought to kick the London Chamber of Commerce mineral oil section's evidence and its members out of the precincts of the House, and if the London Chamber of Commerce has any self-respect, it should promptly prevent the prostitution of its name and prestige to serve the purposes of agents for villains proved guilty of arson and murder in America. The House of Commons Committee should know that this evidence is deliberate lying, got up for the benefit of the American oil gang, and that public safety and all honest scientific opinion demand that the Abel flash point be raised to 100 degrees.

#### SOMERSET HOUSE AND PAUPERS' MILK.

NOTHING is evidently too mean to receive the support of Somerset House and its analytical curiosities, when not even paupers' milk can attain a paupers' standard if Somerset House has anything to do with it. The lot of the poor in Irish workhouses is not enviable in a sanitary sense, and we think that Somerset House might for once have strayed into accuracy. At Bailieboro' last week, Sergeant King, Inspector of Food and Drugs, summoned Charles Cranston, Rakeevan, for supplying buttermilk to Bailieboro' Workhouse on February 20, as a contractor, which was certified by Sir Charles Cameron, public analyst, to contain 18 per cent. of added water in addition to 25 per cent. allowed for churning purposes.—Mr. Chambers, solicitor, appeared for defendant.—Complainant stated: At last Petty Sessions this case was adjourned on the application of the defendant, and I was then directed to forward the third part of the sample to Somerset House, London. I did so, and on the 16th of this month I got a certificate.—Mr. Starkie—State the facts of the case from the beginning. Complainant—On February 20th I attended at the Bailieboro' Workhouse and took a sample of the defendant's buttermilk as it was being delivered under a contract. I divided the sample into three parts, gave one to the defendant's servant, sent another to Sir Charles Cameron, the Public Analyst, and retained the third, which was subsequently forwarded by me to Somerset House. On March 8th I received this certificate (produced) from Sir



Charles Cameron. Mr. Chambers, solicitor—I object to its being put in evidence without his personal attendance. The prosecutor has given verbal notice that he would not proceed with the case, and I now make application to you for costs. Professor Cameron stated in his certificate that the milk contained 18 per cent. of added water, in addition to 25 per cent. allowed for churning purposes. After the summons was issued my client sent his part of the sample to Professor Tichbourne, and he certified that it contained only 21 per cent. of added water, which was not in excess of the amount allowed for churning. On last court day I was unable to be present, but I learned that the third part of the sample was ordered to be sent to Somerset House, and the certificate received from that place corroborates Professor Tichbourne. Now, the reason I apply to you for costs is—under the first Food and Drugs Act, an Inspector in taking a sample was obliged to divide it into three parts and give one to the vendor, but under the Amended Act he was not obliged to give a part of the sample to the vendor. Though the proceedings in this case are brought under the Amended Act, the complainant acted in a wise and judicious manner in dividing the sample into three parts and giving the defendant one, otherwise he would have no way of proving that the milk was pure and could not escape punishment. If the sample had not been divided and had been sent to Professor Cameron who would certify that it was adulterated there would be a gross miscarriage of justice. This is not the first case in which costs were allowed in this court on account of the negligent way in which Professor Cameron does his duty. In another case in which I was defending he certified that a sample of buttermilk contained 75 per cent. of added water in addition to 25 per cent. allowed for churning.—Mr. Gibson: That would be all water.—Mr. Chambers: I ask you for costs, which the Grand Jury will be called upon to pay. I have nothing to say against the complainant, who does his duty in a proper manner. I think there is a serious blot in the Amended Act, because if the sample taken was not divided and that Professor Cameron made a mistake the defendant could not escape conviction on a charge of fraud.—Mr. Starkie: There is a note to the Amended Act in Molloy's Book about one sample only, but I think the Legislature intended differently. I would say that the police are wise in every case in dividing the sample into three parts.—Mr. Chambers: The sergeant deserves credit.—Mr. Starkie: Sir Charles Cameron says the milk contained 18 per cent. of added water over what was allowed and Professor Tichbourne 21 per cent.—Mr. Chambers: That is less than what is allowed for churning.—Mr. Starkie: Is the certificate of Somerset House evidence?—Mr. Chambers: It is evidence as far as the analysis goes—that is in giving the percentage of solids and liquids, but a statement of adulteration would not be evidence.—Mr. Starkie: It states that the sample affords no evidence of any water being added after making a reasonable allowance for churning purposes. Complainant, in reply to Mr. Starkie, said that after receiving the certificate from Somerset House he told Mr. Chambers that he would not go on with the case.—Mr. Chambers: We had to pay Professor Tichbourne a fee of 10s. 6d.—The case was dismissed on the merits and £1 costs allowed.—Mr. Starkie: Now that the case is over there is one point that strikes me. What proof is there that the sample analysed by Professor Tichbourne is the one that was given back by the sergeant?—Mr. Chambers: Professor Tichbourne states in his certificate that the seal was unbroken. I could prove that it was delivered at the post-office. I intended to produce Professor Tichbourne here to-day, and I would require the other side to produce Sir Charles Cameron.—Dr. Ryan: Is it necessary to put a name on the bottle; I think it would be better to have some mark?—Sergeant Keane: I always put on the name and the date.—Mr. Starkie: It is clear the prosecutor acted properly in withdrawing the case. With regard to certificates, the Act of Parliament lays down that the certificate of a public analyst shall be evidence unless you require him to be produced.—Mr. Chambers: It is not conclusive evidence.

#### MEAT INSPECTION AT SMITHFIELD.

THE Sanitary Committee's report recommended that the salary of Senior-Inspector Terrett be increased from £200 to £350 a year, and subsequently by annual instalments of £10 to a maximum of £400; and further that the number of staff inspectors of slaughter-houses and meat be increased from four to six, and that three new inspectors be appointed

accordingly at a salary of £200 per annum. Dr. Sedgwick Saunders, in his report, pointed out that there had been no increase in the staff in this department for 15 years, though there had been an enormous increase in the amount of material which had to be dealt with. In 1882 the total amount of the meat supply at the Central Market was 211,461 tons, whereas in 1895 the figures rose to 347,283 tons. To deal with this amount he contended that the present number of officers was inadequate. The question he considered was one of great magnitude and importance, since it entered largely into the supply of food to the poorest classes of the community. There was, he added, considerable danger of bad meat being distributed to the public with the present limited staff.

Mr. Deputy WHITE pointed out that the eyes of London were fixed upon the action the Court took in this important matter, and urged the adoption of the report.

The report was carried.

At Clerkenwell Police-court on May 1, William Thorley, of Callas, Ashby-de-la-Zouch, was summoned by Sanitary Inspector Billing, of the Holborn Board of Works, for depositing, at 93, Cowcross-street, the premises of a meat salesman, a carcass of a heifer, which was diseased and unfit for food. The inspector said the meat showed traces of pleuropneumonia. Mr. Horace Smith imposed a fine of £20. George Farrant, of Haverhill, Suffolk, for depositing at 111, Charterhouse-street, three carcasses of diseased mutton, was fined £10.

#### IMPORTANT HIGH COURT DECISION *re* MILK.

In the Queen's Bench Division, before the Lord Chief Justice of England and Mr. Justice Wills, the case of Spiers and Pond, Limited, v. Bennett, stated by a Metropolitan Police Magistrate, was heard. At a Court of Summary Jurisdiction a complaint preferred by Albert Bennett, a sanitary inspector charged with the execution of the Sale of Food and Drugs Acts (hereinafter called the respondent), against Spiers and Pond, Limited (hereinafter called the appellants), under section 9 of the Sale of Food and Drugs Act, 1875 (38 and 39 Vic., cap. 63), charging that they, the appellants, on September 25, 1895, at Farringdon-street Station, in the parish of St. Sepulchre, in the county of London, did unlawfully sell a certain article—to wit, milk—from which the fat had been abstracted by skimming or otherwise to the extent of at least 17 per cent. without disclosing to the purchaser such abstraction or alteration, contrary to the provisions of section 9 of the said Act, was heard and determined. By section 9 of the Act it is provided that "No person shall, with the intent that the same may be sold in its altered state without notice, abstract from an article of food any part of it so as to affect injuriously its quality, substance, or nature; and no person shall sell any article so altered without making a disclosure of the alteration under a penalty in each case not exceeding £20." At the hearing before the magistrate the following facts were either admitted or proved:—That the appellants were refreshment contractors carrying on business at (amongst other places) Farringdon-street Station. That on the said September 25, 1895, at about 2.30 p.m., the respondent entered the said premises, walked up to the counter, and requested to be supplied with a glass of milk, and that an assistant of the appellants thereupon poured out a glass of milk from a churn standing on the said counter and handed it to the respondent. That the milk was obtained from the churn by means of a tap, but the churn was so constructed that no milk would flow from the tap unless and until, by pressing a knob or button at the top of the vessel, a piston-rod or "dasher" descended to and reached the bottom. The object of this arrangement was that the milk and cream therein should be kept properly mixed together. That the milk on flowing from the tap was received and was supplied to the respondent in a glass whereon were distinctly written in a blue colour the words, "Not guaranteed as new or pure milk or with all its cream; see notices." That on the counter, at the distance of a few feet from the place where the respondent was standing when he was served with the said milk and facing the entrance to the said refreshment rooms from the street, was placed a framed notice, which was in the following words:—"Milk Notice.—Spiers and Pond (Limited) purchase all milk sold by them under a warranty of its purity and genuine quality, and take all possible precautions to insure its supply to their customers in proper condition; but they are unable to guarantee it as either new, pure, or with all its cream, and (to meet the require-



ments of the Sale of Food and Drugs Act) do not, therefore, sell it as such." It was stated by the respondent that he saw the writing on the glass in which he had been served for the first time whilst he was in the act of dividing the milk for the purpose of fulfilling the requirements of section 14 of the Act; but that he did not see the notice on the counter until his attention was called to it by the appellants' assistant immediately afterwards. That the milk, on being submitted to analysis, proved to be deficient in cream to the amount of 17 per cent. It was proved on behalf of the appellants that the only milk supplied to the appellants' said refreshment rooms was supplied to them by the London and Provincial Dairy Company, and that a servant of the company, at 7 a.m., on September 25, 1895, brought four quarts of milk in a can which was not locked or sealed to the said premises and placed it on the counter; that no other milk was brought to the said premises on that day before the respondent visited them; that upon the arrival of the milk, the appellants' assistant, after washing out the churn with hot water, poured into it the contents of the can until the churn was completely filled; and that the portion of the milk remaining in the can after the churn was completely filled was poured into two jugs and sent down to the kitchen of the said premises. It was further proved on behalf of the appellants that a contract had been entered into in writing on September 18, 1894, between the appellants and the dairy company for the supply of milk to various London establishments (including the said refreshment rooms) belonging to the appellants during a period of 12 months from October 1, 1894, and that a warranty in writing, forming part of the said contract, had been given by the dairy company to the appellants, which was in the words following:—

"To Spiers and Pond (Limited).—We the undersigned hereby warrant that all milk that shall be supplied by us to you shall be new milk in good condition, pure, and unadulterated, in the same state as when taken from the cow, without the addition of water or any other substance, and without the abstraction of cream or any other constituent part of the milk.

"LONDON AND PROVINCIAL DAIRY COMPANY,  
Halkin-street, West Belgrave-square,  
London, S.W.

"Date, September 22, 1894."

It was contended for the appellants (*inter alia*) that the writing on the glass, together with the notice on the counter, constituted a sufficient "disclosure of the alteration" within section 9 of the Act. On behalf of the respondent it was contended (*inter alia*) that the said notice and the said inscription on the said glass did not constitute a sufficient "disclosure of the alteration" within the meaning of section 9 of the Act. The magistrate was of opinion that, there having been an alteration in point of fact, the notices were only in the nature of a refusal to guarantee the quality of the milk, and did not, therefore, constitute a sufficient disclosure of the alteration within the meaning of section 9 of the Act, and convicted the appellants, and imposed a penalty of 40s. and £3 3s. costs. The question for the opinion of the Court was whether the appellants were legally and properly convicted of the offence charged in the complaint.

Sir E. Clarke, Q.C., Mr. J. P. Grain, and Mr. E. Foa appeared for the appellants; Mr. Channell, Q.C., Mr. Courthope-Munroe, and Mr. J. R. Atkin for the respondent.

The Lord Chief Justice: There is no evidence that the appellants abstracted anything.

Mr. Channell, Q.C.: I admit there is no evidence if the onus of proving that the appellants abstracted the cream is on the prosecution.

The Lord Chief Justice: What more can they do? There was no knowledge of any alteration, if any alteration in fact took place.

Sir E. Clarke, Q.C.: In consequence of the case of "*Dyke v. Gower*" (1892, 1 Q.B., 220) the appellants have taken the precaution to put up the notices. We are not within section 9 at all, because there has been notice, and therefore disclosure. Unless this notice is held sufficient, Messrs. Spiers and Pond must cease the sale of milk. I am at a loss to imagine why a public body should start a prosecution against Messrs. Spiers and Pond at such a wicked waste of public money.

Mr. Channell, Q.C., for the respondent, submitted that sections 6 and 9 of the Act were correlative. Section 6 dealt with adding substances to the milk, section 9 with taking away from it. Here the appellants had not disclosed that there had been an alteration; they simply said they did not know whether it had, in fact, been altered or not. The Legislature had imposed a penalty in this case where

the person was not really in default. There was no suggestion that there was any knowledge on the part of Messrs. Spiers and Pond.

Sir E. Clarke, Q.C., in reply, cited "*Gage v. Elsey*" (10 Q.B.D., 518); "*Pope v. Turle*" (L.R., 9, C.P., 499).

The Lord Chief Justice, in giving judgment, said:— I should be very reluctant to say anything which would have the effect of in any way interfering with the enforcement in all proper cases of a very salutary Act of Parliament, but I cannot help thinking that in this case the zeal of the inspector outran his discretion. Looking at the whole of the circumstances of the case, I think that, although perhaps they might not have been fully within the inspector's knowledge at the commencement of the prosecution, he might, when they came within his knowledge, have been induced to abandon the prosecution. I think it impossible to doubt that Messrs. Spiers and Pond did all they could reasonably be expected to do to comply with the provisions of the Act. But that does not dispose of the case. The question is, Although they may have done all they can to comply with the Act, have they in fact complied with it? The real point is, Can it be said that the appellants made adequate disclosure of the alteration within the latter part of section 9 of the Act? On the whole, I have come to the conclusion, with some hesitation, that Messrs. Spiers and Pond have made a disclosure. It is conceded that they need not make a disclosure of the precise character of the alteration. They were not, it is conceded, bound to say, "This milk has had 17 per cent. of cream abstracted." But it is contended that they were bound to make a disclosure of the alteration. I agree that the notice on the glass does not amount to much more than "I am not guaranteeing it with all its cream." It is equivalent to saying, "There may be an alteration; I cannot be quite certain; but if there is, I give you notice to look out for it." But do not the last words of the notice, viz.: "We do not therefore sell it as such"—mean "We are dealing with an article the exact position of which it is impossible to give, and we do not sell it to you as milk which has not had abstracted from it some of its important qualities"? That may not literally be the construction of the Act, but I think it would be a very slavish keeping to the letter of the Act if we were to say that a person is to be held liable to the penalty under such circumstances as these. I am sure we are doing no violence to the construction of the Act in holding that the magistrate was wrong. Mr. Justice Wills concurred. Conviction quashed.

## GOOD WORK IN GLASGOW.

SHERIFF FYFE had a busy day with wily milkmen Glasgow on May 4. He began with John Reucassel, farmer Billybeg, Kilkerran, who was charged with having, on March 27, sent milk containing water to a Glasgow dairyman. Samples of the milk were taken at St. Enoch Station by W. T. Armstrong, sanitary inspector. The samples from two butts of sweet milk were certified by Dr. Clark to contain 18 per cent. of added water, while the sample taken from a butt of skim milk showed 12 per cent. of added water.—Mr. John Lindsay, assistant-clerk of police, prosecuted. It was stated that the consignee of the milk had six retailers whom he supplied.

Mr. Reucassel, who was represented by Mr. Dickie, writer, said that he first saw the milk when it was in the butts, and he drove it to the station. No water was put into the milk. The cows were being fed on mangold, and the milk was not, therefore, so good as when the cows were fed on grass.

The Sheriff said the unfortunate thing in these milk prosecutions seemed to be that everybody would persist in assuming that all that they had got to establish was their personal good faith. But the Act of Parliament did not take any cognisance of what people did in good faith. The sole question was what was the condition of the milk when delivered in Glasgow? They were quite familiar with retail sellers being fined for being the medium of conveying the milk to the consumers. He thought that in a great majority of cases these people were stating the truth when they said that they sold the milk exactly as they got it, but that did not prevent their being held liable. There had been no evidence with reference to the suggestion that the extra watery nature of the milk might have been attributable to the peculiarity of the food which the cows had got, but even that would not absolve the accused from liability



for selling this milk in the condition in which it was sold. No attempt had been made for the defence to lead any scientific evidence as to how the watering could have come about, nor any practical evidence of what happened to the milk between the time it was milked from the cows and the time when Mr. Ruecassel saw it in the butts. His lordship found the charge proven, but said that though there were three charges, for each of which the Act provided a penalty of £20, technically there was only one offence, as they all related to one consignment. He imposed a penalty of £10, including expenses.

Andrew Morton, farmer, Inchbelly Farm, Kirkintilloch, was charged with having, on April 1, delivered to a Glasgow dairyman 32 gallons of sweet milk which contained water. Samples were taken by Mr. Armstrong at Springburn from three butts, which, on analysis, were found to contain 14, 15, and 17 per cent. of added water respectively. It was stated that the consignee of the milk was a dairyman who supplies over 50 customers, including hospitals, hotels, and ships. The dairyman said that he complained to the sanitary authorities about the quality of the milk which he received from respondent.

Mr. Morton said that he had never received complaints about the quality of the milk. So far as he knew, no water was put into the milk, and he could not account for the water being in it.

The Sheriff said that, having regard to the very large dissemination, and the serious risk run by an increased number of persons, he would impose a fine of £12.

An appeal was intimated, the contention being that the inspector ought to have given a sample of the milk to the lad in charge of respondent's van.

Jane Chisholm, dairy-keeper, 58, Stevenson-street, Calton, was fined £2 for having, on Sunday, March 22, sold Inspector Kerr a pennyworth of sweet milk which was deficient in 31 per cent. of natural fat.

George Robertson, dairyman, 40, St. Clair-street, was fined £3 for having, on the same day, sold to Inspector Armstrong a pennyworth of sweet milk which was deficient in 26 per cent. of natural fat.

### WATERED MILK IN GOVAN.

IN Govan Police Court—Baillie Armstrong on the bench—Andrew Chalmers, farmer, Oldbrae, Neilston, was charged with two offences under the Food and Drugs Act. On March 27, it was alleged, he had sold to the proprietor of a dairy in the burgh six gallons of skim milk, a sample of which was found on analysis to contain eleven per cent. of added water. He pleaded not guilty. Mr. Crawford, writer, who appeared for the defence, contended that the prosecution should be at the instance of the Sanitary Inspector, and not of the Fiscal. The Court repelled the objection, and Mr. Crawford requested that it should be noted. After hearing the evidence, the Magistrate imposed a fine of 30s. The second charge was that he had sold to another dairy-keeper a similar quantity of milk, a sample of which was found on analysis to contain seven per cent. of added water. He pleaded guilty, and a similar penalty was imposed. One of the dairykeepers to whom the milk was sold was also before the Court, but the charge against her was withdrawn.

### MILK AND MR. RICKETTS.

At Worship-street, on April 28, Henry Mack, milk salesman, of Old Ford-road, was summoned on two informations for selling milk adulterated with water and for selling milk deficient in cream. Mr. Ricketts, solicitor, defended, Mr. Morris, solicitor, prosecuting for the Poplar District Board of Works. The sanitary inspector of the parish sent a girl to make a purchase at defendant's premises, receiving from her the article sold immediately afterwards. The seller was a boy in defendant's service. The "milk" was certified to be adulterated with added water, and to be likewise deficient in butter fat, showing that the cream had been extracted. In giving evidence the parish officer did not, it was contended, state that the article had been purchased for analysis "by a public analyst," and Mr. Ricketts took objection that there had not been a compliance with the 14th section of the Act, citing "Barnes v. Chipp," a case carried to the High Court, in support of his contention. Mr. Corser coincided and dismissed the summonses.

### MEAT.

At Clerkenwell last week Arthur Hackney, of 86, Essex-road, was summoned for exposing for sale on April 10 beef which was unfit for the food of man. Mr. Bramall prosecuted on behalf of the Islington Vestry, by one of whose officers the summons was taken out. Mr. Derham appeared for the defendant. Inspector Fortune proved finding one piece of meat in the shop and 15 other pieces of meat in an ice safe in the defendant's shop. All the pieces of meat were stinking, and quite unfit for human consumption. There were also in the defendant's shop four pieces of mutton which were unfit for the food of man.—Mr. Derham: Do you know that the defendant has been in business in Essex-road for nine years?—The witness: I have known him for three years.—Mr. Derham: He has never been summoned before. The defendant—He has been cautioned. Mr. Derham—Ice would have preserved this meat. The witness—No, it was past preserving. (Laughter.) Mr. Bros.—If it had been kept frozen it would not have gone bad. (Renewed laughter.) Dr. Harris, medical officer, said none of the meat was fit for food. Mr. Derham—Would the meat have been good if you had seen it two days before? The witness—Possibly. Mr. Derham said the defendant was a highly respectable man, and at the time the meat was seized Hackney was away holiday-making. His servant had not acted in accordance with instructions, or else he would have placed ice in the safe in which the meat was found. Mr. Bros imposed a penalty of £5.

### DR. MANSFIELD ROBINSON ON FOOD ADULTERATION.

At a meeting of the Sanitary Inspectors' Association, held at Carpenters' Hall on Saturday, Dr. Mansfield Robinson, clerk to the Shoreditch Sanitary Authority, read a paper advocating reform of the Adulteration of Food and Drugs Act. He said that whereas the laws against adulteration of food should be clear and unambiguous they were badly drawn. The administration of the laws, instead of being easy and certain, was cumbersome and highly technical; and while innocent retail dealers were visited with severe penalties and damage to their business, wholesale dealers actually guilty of the adulteration escaped scot free. Indeed the recent decision of Mr. Justice Hawkins in the case of "Regina v. Smith and Kerr" rendered the Food and Drugs Act a dead letter so far as prosecutions for false warranties were concerned. He recommended the infliction of heavier minimum penalties for breaches of the Act, to be increased for subsequent offences, with the addition of the imprisonment of the guilty dealer, and that the innocent retailer should have power to bring the guilty wholesale dealer before the Court for conviction in his stead. He further advocated the extension of the Act to cover the sale of disinfectants, antiseptics, and articles used in cooking food, such as baking powder; and the fixing of a standard of purity for milk and butter.

### MARGARINE.

At Belfast, on April 28, Wm. Murray, grocer, carrying on business on Mountpottinger-road, was summoned by David M'Master, Inspector under the Food and Drugs Act, for having sold margarine as butter. Mr. A. J. Lewis prosecuted, and defendant was not professionally represented. The inspector stated that on the 28th March he sent a Mrs. M'Chesney into the shop of the defendant to make a purchase of butter. On getting a signal from her that the purchase was completed, he followed her into the shop and took a parcel of what appeared to be butter from her. He spoke to the person who was in charge of the shop, and told her he was an inspector and that he had got the butter for the purpose of analysis. She admitted it was margarine, and that she had sold it as butter. Mrs. M'Chesney gave evidence as to having asked for a pound of butter at 1s., and having got the parcel which she handed to the inspector. She had been in the shop previously, when she had got for butter the same substance. The analyst's certificate showed the substance was margarine. The defendant said his sister had bought the margarine as butter and had sold it as such. Mr. Lewis explained that that was no defence in point of law. He would like to have the dealer in court for the purpose of examination; but, as he was not



present, he would ask their Worship to attach no importance to the statement made. There was no doubt the witness had got margarine for butter, and had got it previously. In reply to the Chairman, Mr. Lewis said that the district was principally a working-class one. A fine of £5 was imposed.

At the Bristol Police-court, on April 29, a woman named Macarthy, keeping a general shop at Brandon-street, St. Augustine's, was summoned, under the Food and Drugs Act, for selling margarine without its being labelled, and also without any margarine wrapper. Inspector W. Beer gave evidence, and said that the analyst remarked that the article was "Margarine with a vengeance." The Bench fined defendant 5s. and costs, and cautioned her to get wrappers printed.

### THE MARGARINE ACT: A NOVEL POINT AND A HEAVY FINE.

MICHAEL M'CARTHY, wholesale provision dealer, Gartside-street, Manchester, and also trading as the Irish and Foreign Produce Company, at 30, Withy-grove, was summoned before the Salford Borough Justices on May 1 for a breach of the Margarine Act, 1887. The specific offence alleged was that the defendant sold to one Emma Long, of Tintern-street, Ordsal-lane, a quantity of margarine as pure butter, and that the margarine was not marked as such according to the Act. Mr. A. Somers, who appeared for the defendant, admitted the facts as alleged by the prosecution, but argued that the Act did not disclose any offence. The only attempt to say what an offence was under the Act was in section 6, which stated that any person dealing in margarine in the manner described in "the preceding section" should conform to certain regulations. But the "previous section," section 5, did not lay down anything at all, or deal with the matter in any manner whatever. He (Mr. Somers) contended that "the preceding section" must refer to the 5th section, and that therefore no offence was disclosed. After a good deal of argument Mr. Makinson said he must hold that the word "the" did not necessarily mean the section immediately preceding, and must refer to section 4 where the offence was disclosed. It was stated that the defendant was charged with similar offences at the Manchester City Court on the 23rd October and fined £10 in each of four cases, or £40 in all. The magistrate imposed a fine of £40 and costs, or two months' imprisonment. The magistrate, in reply to Mr. Somers, said he was willing to state a case on the point of law raised.

### ADULTERATION IN LEEDS.

At Leeds, on May 2, James William Taylor, grocer, 26, Roxburgh-road, Dewsbury-road, was summoned at the instance of Inspector Walker for exposing for sale by retail in his shop parcels of margarine, there not being attached to each parcel a label "Margarine" in letters 1½ in. square. The Town Clerk prosecuted, and Mr. Dunn defended. His worship imposed a fine of £3.

Sarah Ann Tipling, confectioner, 128, Whitehall-road, New Wortley, was summoned for selling to Inspector Walker on April 1 one gill of new milk which the City Analyst certified to contain 16 per cent. of added water. Defendant stated that she sold the milk in the same state as she received it from the farmer. Fined £1 5s. The Town Clerk prosecuted.

## CORRESPONDENCE.

### THE FARCE OF THE LONDON WATER COMPANIES' ANALYSIS.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—I was rather surprised to read, in your leading article of current issue, such a severe condemnation of Chelsea water. It is quite at variance with my own experience of this year.

I enclose the results of each month's analysis, from which you will notice that the water has been fairly good, excepting in January. In that month the County Council inserted fire hydrants in this district, which would account for the difference in quality. The water was examined by Wanklyn's process. I am inclined to believe that the water collected by the inspector was polluted from defects in the water mains. I may say in conclusion that I have no

interest whatever in the Chelsea Water Co., apart from using the water supplied by it.

Results of analysis of samples of water collected from the main at Orford-street, Chelsea, during the early months of 1896:—

| Grains per gallon  | Jan. 26. | Feb. 23 | Mar. 22.  | Apr. 26.  |
|--------------------|----------|---------|-----------|-----------|
| Total Solids .. .. | 25 grs.  | 18 grs. | 20.4 grs. | 18.8 grs. |
| Chlorine .. ..     | 1.4 "    | 1.3 "   | 1.4 "     | 1.4 "     |
| Parts per million  |          |         |           |           |
| Free Ammonia .. .. | .021     | .008    | .0026     | .0132     |
| Albumenoid Ammonia | .115     | .076    | .052      | .07       |

RICHARD HORTON.

8, Orford-street, Chelsea, S.W.

May 5, 1896.

[We publish our correspondent's results, but are satisfied of the accuracy of those of Mr. Cassal and the justice of his condemnation of the water in question.—Ed.]

### THE SALE OF PRESERVED GREEN PEAS.

At the County of London Sessions, on April 28, before Mr. G. Soanes, at the Newington Sessions House, the appeal in the case of Grist v. Summers was heard. It was against a conviction by Mr. Fenwick at Southwark Police-court, for selling preserved peas, in the preparation of which copper had been used, and which, it was alleged, were injurious to health, under Section 3 of the Sale of Food and Drugs Acts. Against this decision the Metropolitan Grocers' and Provision Dealers' Association, on behalf of the defendant, appealed. Mr. Bonsey and Mr. Elliott (instructed by Messrs. Neve and Beck) appeared for the appellant Barton, trading as George Mence Smith at various places; Mr. Dodd and Mr. Hall appeared for the sanitary inspector of the St. Saviour's Board of Works. Mr. Dodd, in opening the case for respondent, said the appellant was convicted for selling a bottle of preserved peas containing eight grains of metallic copper to the pound of peas. That would be equal to 3·16 grains of sulphate of copper or 142 parts in the million, which was an amount likely to be injurious to the health of the consumer. The copper was introduced to give the peas a fresh green colour, but instead of 142 parts in the million being required for that purpose, experiments showed that eighteen parts in a million would suffice. The process was prohibited in most European countries, but not in France, where most of the peas were preserved. In America, a maximum of three grains of sulphate was allowed, but only with the stipulation that it should be expressed on the label of the bottle. Evidence having been given by the respondent and his daughter as to the purchase of the peas, Mr. Richard Bodmer was examined. He said he was the public analyst for the Board of Works, and had for some years been working with Dr. Stevenson, analyst of the Home Office. He analysed the peas in question, which weighed three ounces, and found '8 of a grain of metallic copper to the pound of peas, which represented 3·16 grains of sulphate of copper to the pound, equal to 142 parts in a million. Cross-examined by Mr. Bonsey: Copper was noxious in the metallic state so long as it was soluble, but if it passed through the stomach immediately it was innocuous. The injurious effect from taking copper depended a good deal upon its solubility in the fluids of the stomach. He had discovered since the hearing before the magistrate that the copper present in these peas was not present as sulphate but as phyllocyanate. That was the result of his reading Professor Tschirch's works. He had also discovered since he gave evidence before the magistrate that phyllocyanate of copper was soluble in the gastric juices. Before the magistrate he said that it was questionable whether it was soluble. At the original hearing he declined to give an opinion as to whether the copper in the peas was injurious, but now, having studied the authorities, he found that the copper in the peas was beyond the limit given by the authorities as safe. He should think that a bottle of the peas was more than a man would take in an ordinary meal, and that it would be reasonable to suppose that 4 ozs. would be quite as much as he would eat in the ordinary way, so that he would take one-fifth of a grain of copper in the form of phyllocyanate and leguminate, and that there would be approximately one-third phyllocyanate and two-thirds leguminate, but that was only an assumption. The one-fifteenth of a grain of copper, therefore, would be almost insoluble. He could not give an accurate definition as to



how far sulphate of copper was a poison. It was not as active a poison as arsenic or mercury, and he could not call it a most active poison. The dose of sulphate of copper in the British Pharmacopœia was from 2 to 15 grains. He could not give any idea as to how many doses of peas a man must take before they would prove injurious. He should not think that four ounces taken every day for a week would effect it, and he could not say that the same quantity taken daily for a fortnight would have any injurious effects. The Somerset House authorities had examined a sample of the peas, and found about half the amount of copper he did. But he disputed the correctness of this analysis, because the peas sent to Somerset House were put in a tin vessel, and some of the copper might have been deposited. There was a good deal of dispute whether Somerset House was a competent authority, and he (the witness) thought their methods extremely old-fashioned. He knew that Somerset House was the official referee according to the Act of Parliament. Dr. Stevenson, official analyst to the Home Office and president of the Society of Public Analysts, said that Mr. Bodmer was an assistant in his laboratory for about ten years. He (the witness) had made many experiments with sulphate of copper in relation to the colouring of vegetables generally, and the result was that, in his opinion, such an article was injurious to the health of those who habitually ate them. If very small quantities of the copper were dissolved and absorbed into the system the effects were practically *nil*. He agreed with Mr. Bodmer that phyllocyanate of copper was soluble in the intestinal and gastric fluids. He had tried upon animals the effect of administering copper continuously, and, generally, the result was irritation of the bowels. With reference to the effect of all the salts of copper, he had not made experiments himself, but relied upon the experiments of others. As to the noxious effects of copper upon the human system, that very much differed with different persons according to their susceptibility, as some would be more susceptible than others. In the case of taking lead, some persons would escape from any injurious effects. He did not think that the introduction of copper was necessary for the colouring of peas. Speaking as to the quantity of copper in this case (8 grain metallic copper), in witness's opinion, the effect would render the food one which could not be taken continuously without risk to health, and in the case of the young or dyspeptic the effect would be intensified. The copper in these peas was in excess of that allowed by all authorities who had considered the subject. Tschirch recommended 1 in 25,000, or about one-third of the present quantity. Cross-examined by Mr. Bonsey: He could not say that the difference between the analysis of Mr. Bodmer and that of Somerset House could absolutely be explained by the fact of the Somerset House sample having been in a tin. If the peas were put in the tin, that might make some difference, but it would not be likely to account for the Somerset House quantity being half that of Mr. Bodmer. The metallic copper would only be dissolved by the gastric juices. If a person swallowed a halfpenny it would take years to dissolve if it remained in the bowels. He agreed that the copper in the peas was neither in the metallic state nor in the sulphate. He thought it would greatly depend upon the state of the digestion if 90 per cent. passed off. Generally the greater part of the copper passed away, but he knew that the copper dissolved in the gastric and pancreatic juices, and was, therefore, in the proper condition for distribution in the blood. He had proved that by experiments in artificial digestion. He did not know of any case recorded in which it was distinctly proved that injury had been caused by eating coppered peas. The Board of Health in Paris on one occasion made restrictions as to coppered peas; subsequently those restrictions were removed. He did not expect one meal of the peas to produce any effect upon a healthy man. Probably in time a man might injure his

health by persistently eating the peas. Copper was found in many articles of food; in minute quantities in cocoa, wheat, rye, and oysters. Professor Lehmann had said that poisoning by coppered vegetables had not been proved by a single well-observed case. He did not suppose that one dose of three grains of sulphate of copper would injure a person. Anything that produced a metallic taste in the mouth was not, in his opinion, beneficial to health. He knew that oysters from the Cornish coast had copper present in them. —By his Lordship: He expected if a person ate coppered peas every day for a year, he would suffer some effects. Dr. Leonard Wilde said he agreed that metallic copper was innocuous, but the salts of copper were an irritant poison. It was used in medicine to the extent of a quarter of a grain as an astringent, as an emetic from five to ten grains. There was a case reported of a whole family who had been poisoned by eating haricot beans, which had been watered by a solution of sulphate of copper. He had no personal experience of anyone suffering from eating coppered peas. A man, however, might go on for some time taking copper without noticing it, the actual progress being extremely minute. In the Edmonton case the conviction was on 275 of sulphate of copper. —By Mr. Bonsey: The New York law allowed green peas to be sold with three grains of sulphate of copper in the pound, provided it was labelled. —Cross-examined by Mr. Bonsey: Sulphate of copper was not a poison which could be compared with arsenic or morphia. It was not a very active poison. He knew that the medical authorities stated that there was no such thing as copper colic. With reference to the haricot beans case, he had read of it in a book. The beans had been grown in ground which had been watered with a solution of sulphate of copper. He could not say how much copper it would take to poison a family. —Mr. Bonsey: I must tell you we do not convict people in this country upon supposition. This is a criminal prosecution. If you understand the English law you would see that conviction only follows upon the facts being proved. —The witness said he could not say how long such peas as in this case might be consumed before injury resulted. A delicate person would not, he thought, be able to take the peas repeatedly for a week without some ill effects. He would not put an absolute limit to the time during which a person might safely take the peas. Although 20,000,000 cans of these peas were consumed every year, the area over which the peas were scattered was so wide that he could give no opinion. On Wednesday, Dr. A. B. Luff was called, and said he was official analyst to the Home Office, besides possessing many medical qualifications. He had a decided opinion that any copper introduced into peas was a noxious substance, and was injurious to the health of persons consuming those peas. The phyllocyanate of copper found in the peas was as harmful as the most soluble salts of copper. As far as he was aware, Tschirch had expressed the opinion that one in 20,000, or one in 25,000 would be sufficient to give colour to the peas. The peas in connection with this case he believed showed about three times that amount. In a quarter of a pound of peas, which would be, perhaps, the average amount which would be taken by a person at a meal, they would get about one-fifth of a grain of metallic copper, which was equal to a medicinal dose of sulphate of copper. The regular taking of such a dose would lead, he thought, eventually to malaise; the consumer would feel generally "out of sorts" without being able to say why. There was no doubt that the effect of consuming such an injurious foreign substance would be detrimental to the health. By Mr. Bonsey: He objected to the use of copper in peas or any article of food; but not as a medicine. His objection was to the artificial introduction of copper into food. There were some articles of food which contained naturally very minute amounts of copper: he would not object to those articles being used as they are used, because the

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amounts were so trifling. It was utterly impossible for him to give any definite quantity of copper which would prove injurious to health. Dr. F. J. Waldo confirmed most of what had been said by the previous witnesses as to objecting to the presence of copper in peas, as he considered that the effects of copper were cumulative. Dr. James Herron, medical officer of health for the St. Saviour's District Board of Works, said that since the police-court proceedings he had made some inquiries as to copper poisoning, and he believed that such a thing as chronic poisoning existed. Mr. Bonsey then opened the case for the defence, and said he wished to impress upon the Court the seriousness of the case, as these peas formed a very large and important industry, and if an adverse decision were given by the Court it must mean ruin to that trade. Moreover, this was a criminal prosecution, and, under Section 3, if the conviction against the defendant were maintained, should there be a second conviction at any time the Court had no alternative but to send him to prison. This surely was a most serious matter, as defendant never had anything to do with the colouring of these peas, or in any way with their preparation. There had been no facts placed before the Court showing that in any way preserved peas had proved injurious to the persons eating them, notwithstanding the fact that over 20,000,000 tins were consumed annually. If they were in any way injurious, surely within the past thirty years, during which preserved peas had been an article of common consumption, there would have been some cases of injury recorded. Mr. B. H. Paul said that he had made a special study of poisons, and had given evidence in a great number of cases under the Food and Drugs Act. He had received a sealed canister of peas from Messrs. Neve and Beck, stamped with the seal of the St. Saviour's Board of Works, and he examined them, and found the tin contained about three and a quarter ounces of peas. In his analysis of the peas he found about seven-tenths of a grain of metallic copper to a pound of peas, somewhere about one part in 8,772. In his opinion nothing could be said against the wholesomeness of such peas. For more than twenty years he had given special study to the question of copper poisoning, and was familiar with the writings of most of the eminent authorities, including Professor Tschirch and Professor Lehmann. The copper was for the purpose of fixing the colour, but it in no way, in his opinion, added to the colour. The chief part of the copper used in the preparation of peas remained in the husk; a small part of it, however, no doubt penetrated the centre of the pea; that was the result of actual experiment with the particular peas in the sample submitted to him. The action of the copper was that when applied to the peas it mixed with the chlorophyll of the pea, and the result was the production of an insoluble green compound commonly called phyllocyanate of copper. If this phyllocyanate were admitted into the human body, so far as he was able to tell, it passed through as one of the undigested ingredients of the food. Therefore, according to his view, no phyllocyanate would be left in the system. He had made actual experiments upon himself with the peas, and he found within the course of a week, after taking a quantity of sulphate of copper daily for six days, that he did not suffer in any way, and that the sulphate did not accumulate, but passed off unaltered. Flesh contained copper; cocoa frequently contained as much as the peas in question, and oysters a good deal more. In eating a dozen oysters about a grain and a-half of copper would be consumed. Cross-examined by Mr. Dodd: He did not suggest that on every occasion oysters contained  $1\frac{1}{2}$  grains to the dozen. With reference to cocoa, of course, the quantity varied, and cocoa was not usually taken to the extent of a  $\frac{1}{4}$  lb. at a meal. The witness at considerable length described the action of the phyllocyanate of copper upon the chlorophyll of the pea. As to the statements made by the foreign authorities it was very largely a question of quantity. Everything might be a poison from one point of view. He could not admit, however, that sulphate of copper, as present in those peas, was either poison or noxious; it could only become noxious when present in an excessive quantity. The witness had submitted to him a phial containing peas which had been shown to the court by Dr. Stevenson. He explained that in the phial there were the husks of the peas with the colour in them, and the colourless compounds had been washed away to show the effect, and he considered it a very unfair exhibit. He entirely denied that putting sulphate of copper to peas would restore their colour when it had gone yellow. Sulphate of copper would not give a green colour if the colour were not already present in the peas. By Mr. Bonsey: Copper might be taken to the extent of  $1\frac{1}{2}$  grains to 3 grains a dose without producing any bad effect. On Thursday,

Dr. F. J. Smith, F.R.C.P., F.R.C.S., said that he had considered the question of copper in peas, and, in his opinion, the peas were not injurious to health. As to the medicinal use of copper, it had been recommended in various diseases, but in some of these it had been discontinued, as better remedies had been discovered. Cross-examined by Mr. Dodd: He had heard Dr. Stevenson state that Dr. Dupre had said at Edmonton he had had a case in which a person was poisoned by eating peas. He had never heard of a case of copper poisoning or seen one, and in his researches in the medical records he had not been able to find any case of such. He entirely disagreed with the statement that there was any cumulative effect to be produced by taking such small portions of copper as was contained in these peas. Mr. Richard Bannister, deputy principal analyst of the Somerset House Laboratory, examined by Mr. Elliott, said he had analysed a portion of the peas in question. The analysis was conducted by burning the peas to an ash, then dissolving the ash in sulphuric acid, and then by electric current depositing the copper on strips of platinum. They found the quantity of the copper equal to 4-600ths of a grain of copper in a pound of peas, or one-half that found by the public analyst. There was no deposit of copper from the peas on to the tin from which they took the sample. Had it been there it would have been visible. They received samples in tins, bottles, and jars, so that the analysis was not affected by the tin. Somerset House was the analyst for the Army and Navy and the Indian army. Tinned peas were used in both departments as articles of luxury in the hospitals. The sample of peas in this case was under the average of copper found in the samples submitted from the Government departments. He had never come across a case in which anybody had suffered harm from eating "coppered" peas.—Cross-examined by Mr. Dodd: As soon as the quantity necessary to fix the colour in the peas had been absorbed by the chlorophyll, the remainder would be left in the liquid in which the peas were placed, and if there had been too much copper used in the peas in question, the remainder would have been found in the liquid. He had not found any in the liquid. He did not agree with Tschirch that eighteen parts to a million was all that was necessary to fix the colour. He had not made experiments as to whether phyllocyanate of copper was solvent in the gastric or intestinal juices. He simply came there upon subpoena in support of the truth of Somerset House certificate. It was true that the certificates of Somerset House had been upset, but never when the Somerset House analysts had been in court to defend them. (Laughter.) Dr. Hine, a president of the Society of Medical Officers of Health, had for the last twenty years studied the subject of food and its adulterants. The use of sulphate of copper was for fixing the colour in the pea, but it would not impart a green colour. As a medical officer of health he had never considered it his duty to order a prosecution for the sale of coppered peas. He found the copper was not cumulative, but passed freely away, and no injurious effects of any kind resulted.—Cross-examined by Mr. Dodd: He had heard of the regulations as to coppered vegetables in other countries, but he considered the English were quite as capable of making rules for their own country as other countries for theirs. Dr. Bliss, F.R.C.P., etc., senior assistant physician at Middlesex Hospital, had never heard of a case of poisoning by peas. Indeed, again and again he had recommended them to delicate peasons. In his own household, which consisted of thirteen members, he had used preserved peas regularly for years, and all the members of the family consumed them without any ill-effects. Cross-examined by Mr. Dodd: He had taken the peas without analysing them or considering the quantity of copper they contained as an article of regular diet in his household, and whatever the result of the trial he should continue to do so. Dr. Walter Wynter, F.R.C.S., gave confirmatory evidence from the medical point of view, after which the court adjourned.

On May 1 Dr. Burney Yeo, examiner to the Royal College of Physicians, said he had written a book on foods. In his opinion, as a medical man, eight-tenths of a grain of sulphate of copper was absolutely non-injurious. As to chronic copper poisoning, he had never heard of or seen a case of it, and he thought that if there had been any cases they would have been investigated and properly recorded. He had never heard of a case of poisoning by eating coppered peas. Cross-examined by Mr. Dodd: He could not say that he agreed with many of the articles in books read by the learned counsel. Mr. Elliott then summed up the case for the defence, and Mr. Dodd replied on behalf of the prosecution, after which his Lordship announced that he would take time to consider his decision.



# YORKSHIRE RELISH.

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## CAUTION.

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**WILLIAM POWELL** (Trading as Goodall, Backhouse & Co.)

**v.**

**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

---

**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

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*Plaintiff's Solicitor.*



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# Food & Sanitation

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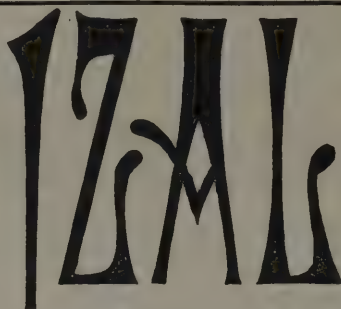
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## Food and Sanitation.

SATURDAY, MAY 16TH, 1896.

### PRESERVED PEAS.

HAPPILY for traders and those concerned with the working of the Food and Drugs Acts, there is at last a definite pronouncement upon the question of sulphate of copper in peas.

THE COPPERED PEAS APPEAL CASE—JUDGMENT.

At the London County Sessions (Newington) on

May 13, judgment was given by Mr. G. Somes in what is known as "The Coppered Peas Appeal Case." It was an appeal, which occupied four days at the last Sessions, against a conviction by Mr. Fenwick, at Southwark Police Court, of a wholesale provision dealer in the Borough—Mr. H. C. Summers, trading as George Mence Smith—for selling preserved peas containing 3·16 grains of sulphate of copper, which the magistrate held to be an ingredient in sufficient quantity to be dangerous to health. The case is regarded as one of great importance to the provision and hotel trades, the annual consumption of these peas in England being estimated at 20,000,000 tins.

Mr. Bousey and Mr. Elliott appeared for the appellant; and the St. Saviour's District Board of Works, who were the respondents, through their sanitary inspector, Mr. A. A. Grist, were represented by Mr. Frank Dodd and Mr. Clarke Hall.

Mr. Somes now delivered judgment. The conviction was under Section 3 of the Food and Drugs Act, 1875. The questions to be considered were, first, the quantity of copper added, and, secondly, whether it was sufficient to be injurious to health. There was some disagreement between various analysts as to the actual quantity of sulphate of copper per pound of peas, and for the present purpose he would take it as three grains. The evidence as to whether or not this quantity was innocuous was very conflicting. Besides hearing the expert witnesses, he (Mr. Somes) had consulted all the leading text-books of toxicology and medical jurisprudence, including Taylor, Guy and Ferrier, Tschirch, etc. It had been urged that if the conviction were upheld great injury would be done to a large and important industry, but the Court were not apprehensive on that score, seeing that there were simple means of obviating such a result. But even were it otherwise, the Court did not think that such a consideration should influence its judgment. After the most careful consideration, the Court were forced to the conclusion that where the opinions of eminent authorities were still in a state of uncertainty, it would be mischievous to countenance an addition of this foreign substance to articles of food in a larger proportion than that which they suggested. The quantity in this case was considerably in excess of that quantity. The Court were, therefore, of opinion that the conviction should be upheld, and they dismissed the appeal with costs.—Mr. Dodd: To be taxed out of session?—Mr. Somes: Yes.—Counsel on both sides thanked the learned Judge for the great care and attention which he had given to the case, and for his exhaustive and valuable judgment.

As usual, this case showed scientific expert-witnessing in its most shameful light, and the disgraceful spectacle of members of certain scientific bodies distorting, lying and prostituting whatever knowledge they may have acquired for a fee is one which may well produce a feeling of nausea amongst traders and magistrates.



It is time certain learned societies marked their sense of the scandal by expelling some of the most notorious fee-hunting liars. It is not surprising that in a House of Commons Committee a caustic Parliamentary pleader should have corrected his rival who quoted the bearded sarcasm that there were three kinds of liars—liars, damned liars, and expert witnesses—by pointing out that there was a fourth, viz., the very much-in-evidence Sir —.

Many months ago we drew attention to the fact that the trader is *corpus vile* for pertinacious fee-hunters and experimenters, and in any new legislation upon Food Adulteration it ought not to be lost sight of that pitfalls like this of preserved peas are a manifest injustice to traders. The law at present demands that the retailer shall be a scientific Admirable Crichton, and know the exact constituents of every one of the scores of articles he vends, but the law lays down no standard of purity for numerous articles, with the result that the trader is often not only prosecuted, but persecuted. Vinegar, alum in baking powder, preserved peas, skimmed condensed milk, the percentage of water in butter, are some cases in point. What is wanted in these matters is definiteness and principle, and less scientific lying. It may be true as Pasteur, Brouardel, Galippe, Gauthier, Proust, Gallard, Honnerkopf, Stubenrauch, Rademacher, Muller, Von Pforzheim, and certain of our own scientific worms urge, that the small amount of copper in canned peas is not hurtful, or it may not be, but there is at least one truth discernible out of all this scientific muck-raking and fee-grabbing, and that truth is the plain one, that it is absurd to expect traders to know what is adulteration when scientific experts proclaim they do not, and that in justice to traders a new Food and Drugs Act is necessary, with a capable court of reference, in place of the Somerset House pseudo analytical *ignorami*, and that this court of reference shall have the fixing of standards of purity of food and drugs. It does not do to trust to foreign opinion or expert witnesses in these matters, as tinned peas, for example, are an imported article, and the frothy Frenchman would demand the prompt lynching of the Pasteurs, etc., if they said coppered tinned peas were injurious, whilst our native expert scientific liars could swear hard enough to burst a 100-ton gun if the fee were sufficiently large in amount.

The proper course is to rigidly stick to principles, and prohibit colourings and preservatives in articles of food. Preservatives have enabled Denmark, France, Germany, and other countries to flood England with their butter, etc., whilst adulteration has also enabled them to undersell and bring our native dairy-farming to its present ruinous condition, and made us become dependent on foreign countries for the necessities of life. A war would quickly teach us by starvation the folly of our *laissez faire* policy, and our Salisburys and Balfours would be better engaged in attending to these questions than in working swindles upon the public for the benefit of landowners and water companies.

### THE SHIPMENT OF DISEASED HORSES TO ROTTERDAM.

IN the House of Commons, on May 7, Mr. Wootton Isaacson asked the Secretary of State for the Home Department whether his attention had been drawn to a case which recently came before Mr. Mead, of the Thames Police-court, brought by the Royal Society for the Prevention of Cruelty to Animals, when two horses were stopped which were being led to the docks for exportation to Rotterdam, both of which were suffering from disease; whether he was aware that diseased horses are daily shipped to Rotterdam for the purpose of being slaughtered and prepared for human food, when they are re-shipped to this country in the form of sausages and tinned meats, and that this practice has been carried on to a considerable extent for some time; and whether he would take means to put a stop to a business so dangerous to health.

Mr. Lees Knowles asked the right hon. gentleman before answering the question to say whether his attention had been called to the Sale of Horse Flesh Act, 1889, and whether he was aware that cases had already been tried and disposed of under that Act.

Sir Matthew White Ridley: I am not aware of the fact mentioned in the last question. I have seen reports in the newspapers of the case referred to, and have communicated with the learned magistrate by whom it was heard. The two horses were being conveyed to Rotterdam presumably, as they were past work, for the purpose of being slaughtered for food. There was no evidence, however, that the horse in respect of which the conviction took place was suffering from any disease rendering it unfit for food. It was lame on one leg in consequence of a contracted tendon and a diseased foot. There is no doubt, I believe, that horses in a similar condition are frequently shipped to Rotterdam, but I have no evidence that a trade in diseased horses is carried on or that the food prepared from their carcasses reaches this country, nor have I any power to prevent the business in question.

### MEAT INSPECTION AT LONDON MARKETS.

DR. SEDGWICK SAUNDERS, the Medical Officer of Health for the City of London, has reported to the Commissioners of Sewers on the inspection of meat in his district. He states that in 1882 the total meat supply to the Central Markets alone was 211,461 tons, whereas in 1895 it was 347,283 tons—an increase of 64 per cent. In 1882, 175 tons were condemned, and in 1895 no less than 599 tons—an increase of 242 per cent. In the first three months this year 127 tons were seized. In spite of the large increase indicated, the inspecting staff of four officers remained the same. There was a prodigious influx of business in the market on Saturdays, during the afternoon and evening, when the public attend in swarms to purchase meat at a cheap rate from the retail butchers and "bumarees." On these occasions, the inspection of the huge quantities of meat sold is quite beyond the power of the present men, with the result that the poor are often imposed upon by the sale of inferior and unsound meat. The Inspectors deal with the supplies at the Central Markets, Smithfield, where there are 248 salesmen, Leadenhall Market, Aldgate Market, slaughter-houses, pounds, and lairs, and the retail butchers' shops throughout the City. The latter had greatly increased in number since the importation of refrigerated meat. In the immediate neighbourhood of the Central Market are several warehouses dealing largely with foreign rabbits, pork and provisions, in which the officers were called upon to interfere frequently many times on the same day. The inspectors had also to examine the cold-air stores at Smithfield, Dowgate-



hill, Paul's Wharf, and St. Paul's Station. Many of the salesmen now called on the inspectors to examine all the offal consigned to them, and much additional labour had been thereby incurred. Many of the offal dealers had lately removed into the Holborn district. The question was of great magnitude and importance, since it entered largely into the supply of food to the poorest classes, who should be efficiently protected by the sanitary authority from buying unwholesome or diseased meat. A further responsibility had been recently cast upon the inspectors by the action of the Board of Agriculture, who sanctioned the sending of animals to market from herds infected with swine fever, under an implied guarantee that they were not to be sold until an inspector had passed them as sound. Much diseased meat came from Holland and Ireland, chiefly pigs from both places. The condemned meat sold for destruction brought in £1,572 last year. On the recommendation of the Medical Officer of Health, the Commissioners of Sewers have determined to increase the staff of meat inspectors to six, the new officials commencing at a salary of £200 a year each.

#### NEWSPAPER SILLINESS.

It is a great thing to edit a "great daily paper," for by its aid any blithering idiot can spoil yards of paper with drivel of the sorriest, and pretend to be intellectual. If there be one thing plain as the nose on a man's face, it is the fact that it would not pay to make extract of meat from broken-down horses, but the Editor of the *Birmingham Daily Post* thinks otherwise, for he says:—"In a case heard at the Birmingham Police-court, which we reported yesterday, it was stated that an old and broken-down horse had been disposed of to the representative of a beef-tea or meat-extract company for the sum of £5 9s. That is worse and worse, for if horse-flesh is difficult of detection in the sausage form, it must fairly baffle the ordinary inspector when it takes the form of meat extract or beef-tea preparations, of which so large a proportion are imported from foreign countries. We are afraid this is a risk against which legislation is altogether powerless. We cannot do without meat extract for making beef tea, upon which so many of our invalids and hospital patients depend, and the greater portion of the supply must come from abroad, owing to the insufficiency of our native herds; but it would obviously be impracticable, even though scientifically possible, to detect the departed gee-gee in the pot of extract, and, unless diseased meat is suspected, therefore, it might be best to cultivate the bliss of ignorance and not enquire too curiously into the genealogy or antecedents of the imported quadrupeds which minister to our food supplies."

This crusted lie has been so often exposed that it is surprising that any writer for the public press should be so lamentably ignorant as to give it further currency. Five pounds nine shillings would buy as many prime cattle in South America, where extract of beef is made as would suffice to feed the entire editorial staff of the *Birmingham Daily Post* for months with prime joints, or supply them with extract of meat for the period of their natural lives, or toss them out of their editorial chairs into the streets to be carted away to the Corporation rubbish yards, their fitting destination, for no one but a cultured idiot would write in earnest that manufacturers would be so foolish as to pay £5 9s. for what they can purchase for a few shillings. If our foreign friends in Antwerp or Rotterdam like horse sausage, and will buy our worn-out horses, well and good for us. They consult their own tastes, but that is no excuse for ignorant drivel in newspaper leading articles.

#### BETTER FINES AT LEEDS.

At Leeds, on May 12th, John William Carter, of New Laith Farm, Whinmoor, near Leeds, was summoned for supplying milk to a dealer in Leeds which contained eleven per cent. of added water. The Deputy Town Clerk prosecuted, and Mr. Child was for the defendant. Inspector Walker entered the box and bore out the Deputy Town Clerk's statement as to his purchase of the milk. Mr. Child: Do you suggest, Inspector, that eleven per cent. is fraudulent?—I do.

A witness named Priceman, to whom the milk was supplied by the defendant, said the milk was all right for three months, but then it was not so good. He had since received complaints from his customers.

It was stated that the defendant had been twice previously convicted for similar offences, being fined £5 each time.

The Stipendiary fined defendant £10 and the costs, or one month's imprisonment.

#### WHAT IS BEESWAX?

THE Neath county bench of magistrates have given as their judicial opinion that beeswax is not a drug within the meaning of the Adulteration of Food and Drugs Act. Welsh tradesmen and others are now puzzled to know where they are. Quite the opposite decision has been given both at the Ashford and Tonbridge Police Courts. In the first-named court it was stated in evidence that the British Pharmacopœia mentioned yellow wax as entering directly into the composition of no fewer than twelve articles, and indirectly into that of eight more. It was the fundamental substance in the preparation of as many as twenty separate articles for medicine mentioned in the British Pharmacopœia.

#### THE USE OF PRESERVATIVES.

In a recent report to the St. George's (Hanover-square) Vestry, Mr. C. E. Cassal, public analyst, says:—

With reference to the two cases of "British Wine" containing salicylic acid, in which the summonses were dismissed, I have to state that, in my opinion, the use of a beverage containing salicylic acid ought to be regarded as "injurious to health" within the meaning and intention of the Acts. There can be no difference of opinion as to the potency of this drug, nor should there be any difference of opinion as to the danger of taking it except under medical guidance. Its admixture, in any quantity whatever, with food or drink is especially forbidden in France, Italy, Spain, Austria, Holland, and other foreign countries, and the cases afford a striking illustration of the necessity for preventing the unacknowledged admixture of so-called "chemical preservatives" with food.

The cases were heard by Mr. De Rutzen, at the Westminster Police-court, on the 6th of November, that of the sample containing 266 grains per gallon of salicylic acid being taken first, and as governing the other case. Evidence in support of the Vestry's case was given by your Medical Officer of Health, Dr. Corfield, and by myself: the principal points put forward being, from the medical point of view, that salicylic acid was a potent drug, that even in very small doses its continued use would be injurious to health, and that its presence in a food in quantity sufficient to produce its specific antiseptic or "preservative" effect on that food would, from that fact, affect the normal process of healthy digestion, and would be injurious to health. From the more strictly chemical and technical point of view the Vestry's evidence showed that salicylic acid could not be called a component part of a genuine "British Wine," that its addition was not necessary for the purpose of producing a sound and good article which would keep, that the addition of the acid might serve the purpose of concealing the inferior quality of the article or of the materials used to make it, and that, when the sample in question was analysed, seven other samples of "British Wines" were



also analysed, and were found to be free from salicylic acid, and from other "chemical preservatives." A large number of witnesses were called for the defence. In this report it is unnecessary to enter into an examination of the fitness of some of these witnesses to give evidence upon such a subject, nor is it necessary to criticise the value of that evidence. It will be sufficient to state that the evidence given by the witnesses for the defence was mainly to the effect that, in their view, the presence of salicylic acid in the amount certified was not injurious to health, and that it was a necessary addition.

The Magistrate reserved his decision, and on the 6th of January delivered judgment, in favour of the defendants and dismissed the summonses in both cases, but without costs. In the course of his judgment Mr. De Rutzen observed that the only witness called to corroborate the view of the Public Analyst was Dr. Corfield. He came to the conclusion that the summonses should be dismissed on the ground that the salicylic acid present was not proved to be injurious to health, and that it was not proved to his satisfaction that it was not required for the production of the article in a fit state for consumption; the cases coming, therefore, according to the evidence given, within the 1st proviso of the 6th section of the Sale of Food and Drugs Act.

It may be well to point out that this judgment only affects these particular cases, and that the Vestry are not precluded from again taking action in similar cases and bringing forward additional evidence in support of them.

In commenting upon the cases, the *British Medical Journal*, the organ of the British Medical Association, makes the following remarks among others: "Salicylic acid is a poison." "It is no sufficient answer to accusations under Section 6 of the Sale of Food and Drugs Act to prove that single large doses of a particular addition have been taken by a number of persons without injury." "They" (antiseptics) "should be absolutely prohibited unless a label be placed upon everything sold after being thus treated." In a further article the *British Medical Journal* observes: "We believe that Dr. Corfield, in saying that the long-continued use of small doses of this powerful drug may be injurious to health, has on his side the support of medical experience and opinion. The decision is greatly to be regretted in the interests of public health."

#### MIDDLESEX COUNTY COUNCIL AND ADULTERATION.

THE General Purposes Committee submitted the report of the county analyst (Mr. Edward Bevan) from which it appeared there had been a slight rise in the percentage of adulterated, and adulterated and inferior samples during the quarter ended March 31st last, though the figures for the twelve months ending the same period were considerably lower than in former years. During the past year a considerable number of samples of beer, ale, and porter had been submitted to the analyst, but, as he had no means of ascertaining whether a sample of beer had been diluted with water, and as beer might, according to the present state of law, be made from almost any substance which was not injurious to health, he was necessarily limited in his examination to a determination of the amount of salt present. In one sample he found 72 grains per gallon. In his opinion such an amount was unnecessary, and, though not injurious to health, its presence was liable to cause thirst. He therefore reported that it contained an excess. The case was heard at Sunbury on March 30th, and was dismissed on the ground that the brewer, and not the actual vendor, had added the salt. No legal limit for salt was at present in force, and therefore the matter rests, to a large extent, on the individual opinion of the analyst. He had good reason for knowing that the subject of the proper limit of salt would receive the attention of the Select Committee lately appointed to consider the question of the purity of beer. Writing with regard to the various cases of dispute with Somerset House and himself with regard to milk analysis, Mr. Bevan said: "The question of fixing legal standards for milk was fully discussed before the Select Committee appointed to inquire into the work of the Sale of Food and Drugs

Act, etc. Nearly all the witnesses, excepting Mr. Bannister, were in favour of fixed legal standards. There was good reason for believing that in any future legislation, standards would be fixed, and that they would be considerably higher than those adopted by Somerset House."

#### WHITEWASHING LONDON'S WATER.

MR. ALBERT SMITH, of the Chemical Laboratory, Great Tower-street, supplies the following analysis of the New River water, for the month of April, taken from the main. All results expressed in grains per gallon:—

|                                       |     |     |        |
|---------------------------------------|-----|-----|--------|
| Appearance in 2-foot tube             | ... | ... | clear  |
| Smell when heated to 100° F.          | ... | ... | none   |
| Chlorine in chlorides                 | ... | ... | 1.21   |
| Phosphoric acid in phosphates         | ... | ... | traces |
| Nitrogen in nitrates                  | ... | ... | .16    |
| Ammonia                               | ... | ... | .0029  |
| Albumenoid ammonia                    | ... | ... | .0018  |
| Oxygen absorbed in 15 mins. at 80° F. | ... | ... | .017   |
| Ditto, absorbed in 4 hours at 80° F.  | ... | ... | .041   |
| Hardness before boiling               | ... | ... | 14.0°  |
| Hardness after boiling                | ... | ... | 3.5°   |
| Total solids dried at 220° F.         | ... | ... | 19.6   |

Bacteriological examination satisfactory.

#### THE LARD MUDDLE.

AT Bridgend, on May 9, Wm. Richards, of Nantyffylon, Maesteg, grocer, was summoned for selling adulterated lard. Mr. T. J. Hughes, for the defence, argued that the stearine which was alleged to be in the lard was not injurious to health, neither was it placed in the lard to increase the bulk. Mr. D. H. Lloyd, grocer, Bridgend, gave evidence in support of this statement, and the case was dismissed.

AT Belfast, May 5, John Moore, inspector of the Bacon Curers' Association of Great Britain and Ireland, summoned Thomas B. Topping, merchant, 1, Corporation-street, Belfast, for having sold on February 24, to Messrs. J. and J. Haslett, certain lard, to which a false trade description was applied contrary to the statute. Mr. James Chambers prosecuted on behalf of the Association, and Mr. McGrath defended. Mr. Chambers said that in the market Irish lard had commanded a big price as compared with American lard. The latter came to them in a soft, oily condition, and could not be made up into packages like Irish lard without the introduction of some foreign matter, such as stearine, which was from the fat of the cow. When that was introduced it looked like Irish lard. The defendant was charged with describing lard as pure which was not pure, and the words "refined in Belfast" also appeared on the packages and were calculated to mislead the public. In a recent action against the defendant the magistrates fined him for having upon his barrels the words "refined in Belfast," holding that this expression was calculated to deceive. He then gave an undertaking to discontinue the practice, and for a time he put upon his boxes "product of the United States." This was a matter of great importance to traders, and to Ireland, which was noted for its excellent lard, and if the offences were proved he would ask the Court to impose a heavy penalty. John Moore said he purchased the packages of lard produced from Mrs. Shanks, Hollywood. He handed to the analyst one block upon which were the words "refined in Belfast." He made enquiries as to where the lard came from, and from what Mrs. Shanks told him he went to Messrs. J. and J. Haslett's. He did not go to the defendant; his name was upon the packages. Mr. Hodder wished to know if the word "refined" had any particular trade meaning. Witness replied that it meant made pure. Proceeding, witness said beef stearine was put into American lard to give it consistency. Witness paid Mrs. Shanks 6d. for the 1 lb. package produced; for the same weight of pure Irish lard he would pay from 7d. to 8d. Mr. Hodder did not think the prosecution could obtain two convictions for words which appeared on one package—"pure lard," and "refined in Belfast." Of course, it was open to them to bring a second prosecution. Mr. Chambers said they were anxious to get an expression of opinion from the bench, and a decision which would show Topping that he was



violating the law by those words, "refined in Belfast," unless he put in some other words to make clear that the product was American. They would be satisfied if he inserted, "adulterated in Belfast." Witness produced a box in which the lard had been, and said there was nothing to show that it was American. By Mr. Hodder: American lard cost 25s. per cwt., and Irish from 32s. to 44s. James Haslett gave evidence as to purchasing lard from the defendant on February 24, and produced an invoice. The lard came to them in boxes, and cost 35s. per cwt. Some of it was subsequently sold to Mrs. Shanks. On the outside of the box was printed—"Pure lard; warranted free from adulteration; product of the United States." Ebenezer Shanks said he purchased from Messrs. J. and J. Haslett a half-hundredweight of lard at £1. It was sent in the box produced; there was nothing on the box to show that the lard was American. Part of the lid of the box had been lost. Witness believed it was Irish lard, and sold it as such. Samuel Templeton, F.I.C., said he analysed a sample of the lard, and found that it contained a mixture of pig and beef fats; the latter kind included stearine. He found 10 per cent. of beef fat in the package.—By Mr. McGrath: He had found beef stearine in mixtures. In his opinion pure American lard would be stiff enough to make up into blocks or packages without the addition of beef fat. There were different qualities of American lard, and only the worst would require refining. By the word "refining," he understood taking away or pressing out of a portion of the oil.—Mr. Chambers: Could the addition of any foreign material to lard be described as refining? Witness: I think not. Refining would be the removal of extraneous matter.—Mr. McGrath said he was not prepared to contend that the description "pure lard" was a true description, but his client was entitled to make the article merchantable, and in introducing the stearine he had no other object than that of stiffening the lard. The beef fat cost as much as, and in some cases more than, American lard. He would ask their worships to take those facts into consideration and say that justice would be met by a very small penalty.—Mr. Hodder said the bench could not overlook the fact that American lard could be bought in the market at 25s. per cwt., which gave him, at the price he sold, an enormous profit. The public must be protected, and they would impose a fine of £10 with 20s. costs.

#### A BRANDY CASE.

At Kensington, on May 5, Rudolf Wahl, 195, Earl's Court-road, was summoned by the Kensington Vestry, under the Sale of Food and Drugs Act, 1875, for selling brandy containing 59·26 of brandy of proof strength, and 40·74 of water (40·74 degrees under proof).—Mr. W. Chamber Leete (vestry clerk) said the facts were simple. On March 5 an inspector went to the premises, where he saw defendant's wife, and asked for a bottle of brandy. He was informed that the bottles were sold at a variety of prices, the cheapest being 2s. The inspector asked to be supplied with a bottle at that price, and paid for it. Defendant appeared on the scene, and said that the article was cooking brandy and under proof.—Inspector H. E. Hawkins stated that on March 5, at 2 p.m., he entered the premises at 195, Earl's Court-road, and enquired of defendant's wife the price of a bottle of brandy. He was informed of various prices, 2s. being the cheapest. He purchased a bottle at that price, and informed defendant's wife that he was an inspector under the Sale of Food and Drugs Act, adding that the sample had been purchased to be analysed by the public analyst, and offering to divide it into three parts. Defendant came forward, said the brandy was cooking brandy and was under proof, and asked witness for his authority. Witness produced this and his card, but the defendant said this was insufficient, and that witness was not justified in entering the shop in the way he did without a magistrate's order, at the same time calling attention to some small figures on the bottle.—Mr. Leete (to witness): Do you produce the bottle? I can produce it.—Mr. Leete: Do so then.—Witness then produced the bottle, which was handed up to the Bench, Mr. Leete observing that it contained a label on which was "50 u.p."—Mr. Bird (to witness): Did he say anything about that before the completion of the purchase?—No, sir.—Was anything stated?—No.—Mr. Leete: You have stated that you offered to divide it into three parts according to the Act. I believe that offer was declined? Yes. Witness added that the whole sample was sent to the public analyst, who divided it into two parts, one for himself and one for witness.—Cross-examined by Mr. Beck, as to whether Mrs.

Wahl did not say to him that 23. brandy was inferior, witness replied that nothing was said.—Sir Harry Poland: It is described here as "fine old pale brandy."—Witness, in reply to further cross-examination, stated that the person who served him said that she was Mrs. Wahl. Defendant did not come in before the purchase was completed.—You saw that mark on the bottle, "50 u.p."?—I did when defendant drew my attention to it.—Honestly, would you expect to get brandy of full proof at 2s.? I should expect it, of course.—Mr. Beck called attention to the name of the makers on the capsule.—Sir Harry Poland remarked that the description on the bottle was not prominent. The article was described as "fine old brandy."—Mr. Beck, in the course of defence, urged that defendant, as was admitted, said that the article was cooking brandy. He would put defendant in the box, and the latter would tell the bench that the intimation was made before the purchase was completed, although he did not suggest that defendant gave a verbal intimation that it was 50 per cent. under proof. On the bottle 11d. duty was paid. The inspector had no right to expect full proof brandy at 2s. a bottle. Unfortunately, Mr. Wahl was a foreigner, and not acquainted with the laws of the country. He relied upon the persons from whom he purchased the brandy, and sold it in exactly the same condition as he received it. It would be wiser, he admitted, if the label bore a clearer statement, but the inspector admitted that he saw the words there. Mr. Beck proceeded to read from the Act, and argued that it had been held over and over again that an intimation on the label brought the vendor under section 8, and exempted him from a penalty. What the law required was, that by some means or other it should be brought home to the purchaser.—After some further discussion between the bench and Mr. Beck as regards the Act, Mr. Bird remarked that a customer would not understand the mark on the bottle.—Mr. Beck replied that the customer ought to understand it.—Sir Harry Poland: It is cooking brandy. Instead of calling it "fine old pale," why not call it cooking brandy?—Subsequently defendant went into the witness box. He said he was not in the shop when the inspector first came in. The inspector entered and asked for brandy. Brandy was recommended at 3s., but the inspector said he wanted the cheapest. Witness came in as his wife was in the act of taking down the brandy and putting it on the counter. He only sold brandy of this kind to cooks for cooking purposes, and he made that statement to the inspector.—An assistant inspector deposed to remaining outside the shop on the day in question for a minute or a minute and a-half. When he went in Mrs. Wahl was attending to the inspector. Defendant was not there. The bottle was on the counter, and he saw the 2s. picked up. Defendant appeared after the inspector told Mrs. Wahl what the brandy was purchased for. (Defendant: That is not true.)—Cross-examined: He saw the defendant come from the back part of the shop.—Mr. Bird, in alluding to the requirements of the Act, said defendant would be fined £5 and the analyst's fee.—An application to grant a case was not acceded to.

#### LONDON'S MILK SUPPLY.

THE present crisis in the milk trade will prove to have been a blessing in disguise, says *The Standard*, if it leads to the adoption of some such scheme of co-operation among milk producers as was described by Mr. W. H. Bailey, Secretary of the Central Association of Dairy Farmers, at the recent meeting of the Swindon Chamber of Agriculture, in accordance with suggestions made at the annual meeting of the Central Association a few weeks ago. Mr. Bailey stated that he had ascertained that farmers sending about 5,000,000 gallons of milk to London annually by the Midland and London and North Western Railways were selling to London dealers at the average rates of 1s. 0½d. per barn gallon (17 pints) for the summer half of the year and 1s. 5½d. for the winter half, delivered in London, and that even less was obtained by those who were sending milk to Waterloo and Paddington. This, however, is not by any means the worst of the case, as a good authority has ascertained that a great number of farmers have recently obtained no more than 4d. per imperial gallon in London and other large towns. Such prices are unremunerative, the last-named being really ruinous. But the lowness of price is not the only disadvantage with which milk producers have to contend. When there is a glut of milk, farmers often have their supply thrown on their hands. Dealers purposely refrain from sending back empties



promptly, so that farmers cannot send their milk for a day or two, and in some cases milk is returned because it has turned slightly sour in hot weather. Mr. Bailey proposes the establishment of a great central co-operative milk-sellers' agency in London, combined with a factory for dealing with surplus milk. The Agency, at the lowest remunerative commission, would dispose of its members' milk to retail salesmen; while surplus milk, and milk which has turned sour, would be dealt with at the factory in the most advantageous way. Mr. Bailey's idea is that if any members of the Association could not get 1s. 2d. per barn gallon for the summer half, and 1s. 7d. for the winter half of the year by selling on their own account, they should be entitled to send their milk to the factory at 1s. 1d. and 1s. 6d., with the understanding that the supply would never be stopped, and that no milk would be returned as sour. As the mixture of separated with whole milk is the chief cause of the fall in the price of milk, no separated milk would be sold to retailers from the factory; but all would be sold in the most profitable way. Mr. Bailey says that the railways bring into London about 80,000,000 gallons of milk per annum, and he has come to the conclusion that the surplus has rarely been more than 10 per cent., while for quite half the year there is no surplus at all. Hence he infers that the factory would have only about 4,000,000 gallons of surplus milk to manipulate, and he shows that any loss upon this branch of the undertaking would be a trifle in comparison with the gain to members of the Association. For example, if the senders of milk to London could get, by means of the Association,  $\frac{3}{4}$ d. a gallon more than they can obtain without organisation, there would be a gain of £250,000 per annum, to which he adds £50,000 as the saving to be effected by dealing with surplus and sour milk at the factory, instead of having it partly wasted and partly dealt with at a disadvantage on farms, some of it being returned with back carriage to pay. Putting the cost of manipulating the surplus milk at £12,500 per annum, and allowing an equal sum for interest, rent, and other expenses, he reckons that the farmers who sent milk to London would save £275,000 a year by the scheme. It is proposed that the Central Association of Dairy Farmers shall consider the scheme thoroughly, with a view to getting it into operation before Michaelmas.

#### LONGEVITY AND ACTIVITY.

GREAT men usually carry their full mental vigour and activity into old age. M. Chevreul, M. De Lesseps, Gladstone and Bismarck are evidences of this anthropological fact. Pius IX., although living in tempestuous times, reached a great age in full possession of all his faculties, and the dramatist Crebillon composed his last dramatic piece at 94, while Michael Angelo was still composing his great canvases at 98, and Titian at 90 still painted with all the vigour of his earlier years. The Austrian General Melas was still in the saddle and active at 89, and would have probably won Marengo but for the inopportune arrival of Desaix. The Venetian, Doge Henry Dandolo, born at the beginning of the eleventh century, who lost his eyesight when a young man while on an embassy to Constantinople, through the treachery of the Greek Emperor Manuel, was nevertheless subsequently raised to the highest office in the republic, managed successfully to conduct various wars, and at the advanced age of 83, in alliance with the French, besieged and captured Constantinople. Fontenelle was as gay-spirited at 98 as in his fortieth year, and the philosopher Newton worked away at his tasks at the age of 83 with the same ardour that animated his physical prime. Cornaro was as happy at 90 as at 50, and in far better health at the age of 95 than he had enjoyed at 30. These cases all tend to show the value and benefits to be derived from an actively cultivated brain in making a long life one of comfort and of usefulness to its owner. The brain and spirits need never grow old, even if our bodies will insist on getting rickety and in falling by the wayside; but an abstemious life will even drag that old body along to centenarian limits in a tolerable state of preservation and usefulness. The foregoing list can be lengthened out with an indefinite number of names, but it is sufficiently long to show what good spirits and an active brain will do to lighten up the weight of old age. When we contemplate the Doge Dandolo at 83 animating his troops from the deck of his galley, and the brave old blind King of Bohemia falling in the thickest of the fray at Crecy, it would seem as if there was no excuse for either physical, mental or moral decrepitude short of the age of fourscore and ten.—*National Popular Review*.

#### WEST SUSSEX COUNCIL AND THE SALE OF FOOD AND DRUGS ACTS.

THE Sale of Food and Drugs Acts Committee submitted a report from the county analyst stating that the following samples had been submitted to him for analysis by the several Inspectors under the Sale of Food and Drugs Act for West Sussex, during the first quarter of the current year:—Milk 23 samples; butter 14 samples; olive oil seven samples; spirits six samples. Only three out of the fifty samples were found to be adulterated, namely, two samples of milk, containing respectively eight and 15 per cent. of added water and one sample of olive oil, which on analysis was found to contain no olive oil at all, but to consist entirely of the much cheaper cotton-seed-oil. The percentage of adulteration found was, therefore, only six, a figure materially smaller than that found, on an average, in the country generally. Mr. Otto Hehner asked the Council to support the Bill drafted by the Council of the Society of Public Analysts for the amendment of the Sale of Food and Drugs Act.—The committee estimated the expenditure for the year ending March 31st at £100.

The report was adopted without discussion on the motion of Earl Winterton.

#### SIR JOHN HUTTON AND SLUM PROPERTY.

MR. CORBETT asked the chairman of the Housing of the Working Classes Committee of the London County Council last week, whether, in the case of the Clare Market Improvement Scheme, Sir John Hutton owned some of the property, and whether he had persistently opposed the Council at the inquiry held; and whether some of the property owned by Sir John Hutton had been condemned by the local sanitary authority.

Mr. Leon (chairman of the committee) said it was true that some property scheduled in the scheme belonged to Sir John Hutton, and he was represented by counsel at the inquiry held by the Home Office. The result of the inquiry had not yet been given.

Sir John Hutton said he had yet to learn that a man was to be accused of unfairness because he protected his own interests. Some of the proceedings of the Council had been of the most unfair character, but at that stage he was unable to make known matters to the Council which he subsequently would.

#### MEAT.

At Ilkeston, on May 7, William Burton, of Ilkeston, was summoned by the Town Clerk of Ilkeston (Mr. W. Lissett) for depositing for sale two sides of mutton, which was on the same day seized and condemned, such meat being in his possession, and intended for the food of man, and being unfit for the food of man, at Ilkeston, on April 29.—Ald. Tatham did not sit in this case.—Defendant said that the meat had passed out of his possession, as he had sold it.—Mr. Lissett said that that admission brought the defendant under the Public Health Acts Amendment Act of 1890, which had been adopted in Ilkeston.—Thomas Evans, nuisance inspector, said that on the Saturday night in question he went to the stables at the back of the King's Head Inn, and in the loft he found two sides of mutton, dressed as if for sale for human food. The meat was full of inflammation, and was unfit for food. He seized it, and after the Medical Officer of Health saw it he took it before Alderman Tatham, J.P., who ordered it to be destroyed. Defendant told him he sold the meat for dog meat.—Henry Green, miner, deposed to seeing defendant carry the carcase to the stable. Defendant went across to the market-place next, and fetched a butcher named Heywood, and they both went into the stable together. They both went away again, but returned to the stable, and witness then heard some chopping, after which they went away. Defendant came back, and asked witness what he was "piping" at. Witness informed the landlord of the inn and the nuisance inspector of the matter.—Aaron Rushden, butcher, Borrowwash, and John Tutin, butcher, Nottingham, both attending Ilkeston market, said that defendant offered each of them the body of a sheep for sale, which he represented as being in nice condition. Neither would buy it.—Defendant was fined £5 for each side, and £1 11s. 8d. costs, or two months' imprisonment.—He went to gaol.

At Halifax, on May 8th, Arthur Sutcliffe, butcher, was charged with being the owner of a carcase of beef, with the



intention of selling the same, when unfit for human food. Mr. Tordoff (from the Town Clerk's Office), appeared to prosecute, and Mr. W. Storey defended. From Mr. Tordoff's opening statement, it appeared that the carcase in question was found hanging in the slaughter-house on the 29th April, but it was placed on a back row, as though defendant's object was to prevent it being seen. Inspector Carnie, however, discovered that the meat was diseased, and sent for Mr. Travis, the chief sanitary inspector, and Dr. Ainley, Medical Officer of Health, who condemned the meat. The inspector afterwards learnt that the defendant had bought the cow from a farmer at Midgley, who on the previous Sunday had found the animal prostrate in its stall. It was a case of "killing the cow to save its life." Sutcliffe agreed to pay 40s. for the carcase, including the hide, which of itself was worth 10s. Had the cow been in good health it would have been worth £7 or £8.—Inspector Carnie said the meat was very dark and dirty looking, badly dressed, and unwholesome in appearance. The kidneys were diseased, and various glands congested and discoloured. Defendant at first denied that the meat was his, saying it belonged to a farmer, but afterwards said he bought it in the dark at night.—Dr. Ainley gave evidence that the meat was unfit for food.—Harry Leever, assistant at the slaughter-house, and James Crossley, farmer, New Laithe, Midgley, also gave evidence. The latter spoke of having found the cow prostrate, and said his son had sold it without his knowledge.—Ernest Crossley, son of last witness, said Sutcliffe agreed to pay him £2 for the cow if it was passed by the inspector.—Mr. Storey, in defence, said it was very plain that defendant did not intend selling the meat for human food without first letting the inspector see it. Otherwise he might have easily taken the carcase to his shop and had it cut up and sold in the usual way, without taking it to the slaughter-house.—The Bench said they would do their best to protect the public against this sort of thing, and they imposed a penalty of £3, with £1 4s. costs, or one month's hard labour.

#### LARD—THE MERCHANDISE MARKS ACT AND FOOD AND DRUGS ACT.

MR. T. B. TOPPING writes:—"The case tried on May 5 is of the utmost interest to the trading community. Up to the present time I have been under the impression that the purity or otherwise of food products was a question to be dealt with by the Food and Drugs Act, but yesterday's proceedings would indicate that I was in error, as it now appears that any article of food that does not correspond literally with the description given is liable to be fined under the Merchandise Marks Act.

"For instance, the best butter contains at least 15 per cent. of water, and if no more than this is found in it the Food and Drugs Act would regard it as pure butter. But not so the Merchandise Marks Act, which requires the description to be strictly and literally correct: this would be 85 per cent. butter and 15 per cent. water. The same thing applies to hams: if in a hogshead of hams, branded and invoiced as prime, half a dozen were found tainted, which often occurs. In both these cases the seller is liable to a prosecution and conviction for applying a false trade description. You see, all that requires to be done is to put the Act into force generally, and business is brought to a deadlock.

"If my case had been brought under the Food and Drugs Act I would have had a good defence, and been entitled to have it dismissed, as you will see from a similar case, a report of which is appended to this.—Yours, etc.,

"T. B. TOPPING."

Extracted from the Newcastle-on-Tyne *Evening Chronicle*, February 23rd, 1893:—"THE FOOD AND DRUGS ACT.—At the Jarrow Police-court this afternoon the Jarrow and Hepburn Co-operative Society was summoned for selling a quantity of lard which, it was alleged, was not pure lard, as represented. Mr. Davidson appeared for the Society and Mr. Lambert watched the proceedings in the interests of the wholesale Co-operative Society. Edward Batey, sanitary inspector, spoke to purchasing three-quarters of a pound of lard from the Society's branch establishment at Jarrow. A portion of the lard was sent to the public analyst, and he certified that it contained at least 7 per cent. of beef stearine. Mr. Davidson held that according to the Food and Drugs Act no offence had been committed. The Act said that the substance used in adulteration must be used for the purpose of cheapening the value of the article sold, and it must be injurious to health. Beef fat was not

injurious to health, and it was not used for the purpose of adulteration, but as a solid to make the lard solid enough for safe transport. Mr. Sutherland, wholesale provision merchant, Newcastle, gave evidence in support of this statement. After consideration, the Bench decided to dismiss the case."

#### LEICESTERSHIRE COUNTY COUNCIL AND THE FOOD AND DRUGS ACT.

THE County Council half of the Standing Joint Committee submitted a report from the Chief Constable (Mr. E. Holmes), from which it appeared that during the quarter 115 samples of food and drugs had been collected and submitted for analysis. In three cases of adulteration the vendors were cautioned, and in four others they were convicted. The whole of the other samples were certified to be genuine. The county analyst (Dr. Bernard Dyer) had reported in detail upon the samples submitted to him for analysis.

Mr. Heward, in moving the adoption of the report of the Council half of the Standing Joint Committee, said they had received a communication from the Lutterworth District Council, saying that they were taking steps by means of their sanitary officer to assist the County Council in preventing the violation of the Food and Drugs Act. They welcomed all such support from local authorities.

#### MILK AND BUTTER.

At Worship-street Police-court on May 8, during the hearing of summonses before Mr. Corser, William Davis, of 156, St. John's-road, Hoxton, was charged on one summons with selling milk adulterated with water, and John Grissbrook, of Medhurst-road, Bethnal-green, was summoned for selling as butter an article which was 75 per cent. margarine.

On the first case, Mr. Robinson, D.C.L. (vestry clerk of Shoreditch parish), prosecuted for the sanitary authority, and produced as a witness Dr. Stevenson, of Guy's Hospital, the well-known analyst. The certificate given by the latter of the milk in question alleged that there was 8 per cent. of added water, and in a discussion with Mr. Corser Dr. Stevenson said the practice was to take 87.5 as the standard for water in milk, but it was a fact that some cows either from nature or poor or watery feeding gave milk with a larger percentage.

Mr. Robinson remarked that shop milk could never be dealt with as the produce of an individual cow, otherwise it would be open to the milk seller to say it was the produce of a poor animal, and no conviction ever take place. The East-end was already known as the "Paradise of the milkman."

Mr. Corser said that the standard adopted by the Government analysts and the Society of Public Analysts, of which Dr. Stevenson was president, was no doubt satisfactory, and the object of the Act was to ensure a pure article.

Evidence of previous conviction having been given, Davis was fined £5 and two guineas costs.

Mr. Margetts, solicitor, representing the defendant Grissbrook, said he had to plead guilty to the fact, having no written warranty, but his client had bought the article complained of as butter, and had consequently sold it as such. He called a well-dressed man named Staples, of 310, Roman-road, Old Ford, as the person who had sold the article to Grissbrook.

Staples, who, it was explained, carried on a wholesale as well as a retail business, said the stuff was sold at 9d per lb. as butter. He admitted it was margarine.

Mr. Corser asked where pure butter at 9d per lb. could be got.

The witness said it was called butter, and sold as butter, but no warranty was given.

Mr. Corser asked the price of margarine, and the witness said it was anything from 4d. to 1s.

Sanitary Inspector Foote said it was the practice of the wholesale dealers to sell the stuff as butter, and if the retailer was prosecuted the wholesale man paid the fine and costs.

Grissbrook was fined 10s. and 23s. costs. The money was paid.

#### MILK.

At Dumfries a fine of £2 and 31s. expenses was imposed on May 5 on John Easton, farmer, Brownfield, for selling milk which contained 7.8 per cent. of added water.



## A STANDARD OF QUALITY FOR MILK.

In relation to this matter, Professor Long, in the *Journal of the Bath and West Society*, gives the case of a Dorset farmer who despatches from 1,000 to 2,000 gallons of milk to London daily. By his contract he is required to provide milk containing not less than 3·25 per cent. of butter fat, and he has not experienced any difficulty in keeping up to that standard. Indeed, out of 10,000 churns sent in six months, only 16 contained milk with as little as 3·25 per cent. of fat in it, and only three milk of lower quality. Professor Long contends there would be no hardship in fixing as the standard of purity for milk this percentage of fat, included in 12 per cent. of total solids. At present there is no fixed official standard for milk, and the Somerset House authorities are believed to pass  $2\frac{1}{2}$  per cent. of fat as sufficient to allow persons charged with adulteration the benefit of the doubt as to purity. A standard sufficiently high is desirable, in order to check the present wholesale mixing of separated with fresh milk, and its sale as whole milk.

## HERTFORDSHIRE COUNTY COUNCIL AND ADULTERATION.

MR. ARTHUR E. EKINS, in his quarterly report as analyst appointed for the County of Hertford, for the quarter ending March 31st, 1896, states: During the quarter ended the 25th March, 1896, forty samples of food were submitted to me by your inspectors. They consisted of twenty-five samples of butter, thirteen of milk, and one each of lard and coffee. Five of the butters were adulterated with 50, 50, 60, 70 and 90 per cent. respectively of margarine, the remainder of the samples being genuine.

Whilst I am pleased to note the improved quality of the milk, I must at the same time remark on the large increase in the adulteration of butter, both in the number adulterated (20 per cent.) and in the amount of margarine in each adulteration.

## NOTTS TOWN COUNCIL AND ADULTERATION.

THE County Analyst's report stated that during the past quarter he had analysed 70 samples under the Food and Drugs Act. The samples were as follows:—Butter 25, spirits 23, milk 21, lard 1, total 70. The whole of the samples of butter were genuine. This was very satisfactory, especially in view of the fact that adulterated butter was largely imported during the winter months. Of the 23 samples of spirits analysed five were adulterated with water beyond the limit allowed by the Sale of Food and Drugs Act, the percentages of added water being 2·6, 3·7, 5·8, 12, and 17. Thus spirits continued to be, as they had been for years past, most liable to adulteration with water. Of the 21 samples of milk two were watered with 7 and 14 per cent. of added water. Of the 70 samples, therefore, seven, or ten per cent., were not of the substance, nature, and quality demanded by the purchaser.

## BUTTER.

At Liverpool, on May 6th, Alice Pys, provision dealer, York-street, Garston, was fined 5s. and costs for selling as butter an article which was not of the nature and substance of that demanded. Mr. W. J. Parkinson, Inspector of the Royal Lancashire Agricultural Society, proved the case, and produced a certificate showing that the article supplied consisted of 75 parts of fats other than butter, and  $14\frac{1}{2}$  per cent. of water. The article was not labelled in accordance with the requirements of the Act.

## SARCASTIC.

Food and drugs are so pure and unadulterated in Cardiganshire that the Act which torments the life of Cardiff retailers has never put its nose inside the county.—*Western Mail*.

## ANALYSTS DIFFER.

In a prosecution by Sergeant Kennedy, St. Anne Shandon Barrack, Inspector under the Food and Drugs Act, against Callaghan M'Carthy, farmer, Killeens, for having sold milk deprived of 15 per cent. of its fat, was heard before Mr. Mayne and Mr. Tilson at Cork, on May 7.

Mr. Thomas Farrington stated, in cross-examination by Mr. Galvin, that he made an analysis of the milk belonging to the defendant.

Mr. Mayne: And you stated yesterday, Mr. Farrington, that you had nothing to show you that the milk had been skimmed.

Mr. Farrington: Yes; Mr. Julian's question yesterday was to that effect.

In further examination by Mr. Julian, Mr. Farrington stated that he had a considerable experience in such cases, and he was accustomed to find that milk in April was of inferior quality, as regards fat, to milk at other periods of the year. In this case he had seen the cow milked, and had made the analysis on the milk thus obtained. The result of that analysis was: General solids, 11·37; butter fats, 2·62; non-fatty solids, 8·75. He had found milk which scarcely contained any fat at all, and he would not say that because milk was in that low quality that fraud had been committed. There was nothing to show him that such had been the case in this instance.

Mr. D. J. O Mahony, City Analyst, was next examined by Mr. Galvin, and stated that he analysed the milk in question. In doing so he adopted the limit of Somerset House—viz., 2·75 of fat. When milk was below Somerset House limit, it was generally assumed to have been tampered with. In this case there was no evidenced that Mr. Farrington had seen the cows what was technically known as dry milked, because it might happen that the milk which he had analysed was only the "fore" milk, which was very generally poor in quality, whereas the strippings, or after milk, was abnormally rich in fat. The standard of Somerset House was 3 per cent. of fat, and the limit 2·76, and his calculations were made on those figures, it being generally understood that when milk was below the limit of 2·75, that a prosecution should be instituted.

Mr. Julian: Your assumption, then, is that when the milk is found to be under the limit of Somerset House, a fraud has been committed? That assumption is a reasonable one until it is rebutted by positive evidence, and we now assert that we have done that here.

The magistrates retired to consider their decision, and after a few minutes' deliberation,

Mr. Mayne said that as the milk was deficient in fat, they should fine the defendant 10s. and ordinary costs. There was no evidence, of course, to show that fraud had been committed.

## CORRESPONDENCE.

To the Editor of FOOD AND SANITATION.

## LONDON WATER.

DEAR SIR,—Who is Mr. Richard Horton, of 8, Orford-street, Chelsea? He is neither a Fellow or Associate of the Institute of Chemistry, nor is he a Member or Associate of the Society of Public Analysts. He is not even in the list of Fellows of the Chemical Society—that noble institution for the relief of unqualified men who want to pose as being fitted to dabble in chemistry. By what right does he "analyse" water and put forward his attenuated results? Those results in themselves are quite insufficient to justify the formation of an opinion. It is in consequence of the dabbling of men like this that the analytical profession is, to some extent, discredited in the minds of those who are unable to discriminate. The giving of opinions on these partial analyses—a common proceeding on the part of medical officers, pill-rollers, and tooth-brush sellers who dabble in analytical work—has done much harm, and although often exposed, still is most injurious. The Horton "analysis" does not give "oxygen absorbed" nitrates, microscopic examination of suspended matters and of the water and other essential data of a proper analysis.

A man who puts forward analyses ought to have at least some sort of credentials.—Yours, etc.,

AN ANALYST.



# YORKSHIRE RELISH.

---

## CAUTION.

---

**WILLIAM POWELL** (Trading as Goodall, Backhouse & Co.)

**v.**

**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

---

**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

65 & 66, Chancery Lane, London,

*Plaintiff's Solicitor.*



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## Food and Sanitation.

SATURDAY, MAY 23RD, 1896.

### THE "STAR" ON COPPER IN PEAS.

OUR contemporary say: "Mr. Collis Clark, hon. sec. of the Grocers' and Provision Dealers' Association, is anxious to have it understood that the recent decision in the case of *Summers v. Grist* recently, at the London County Sessions, has not settled it that coppered peas

are necessarily injurious. 'This is a mistake. Mr. Somes, in his judgment, says that the Court cannot countenance the addition of this foreign substance (copper) to articles of food in a larger proportion than that which they, the eminent authorities, suggest. The quantity in this case is in excess of that quantity. The Court is, therefore, of opinion that the conviction should be upheld.' It will thus be seen that the conviction has gone upon the quantity of copper present in these peas.

"The 'eminent authority' alluded to—Professor Tschirch—says that a safe limit for copper in peas—assuming a full-grown man to eat a kilogram a meal—would be one part in 10,000. In this case there was one part in 8,722. During the case, however, it was admitted on all hands that four ounces of such peas would be considered a reasonable amount to be consumed by a person at an ordinary meal. So, therefore, in such a small quantity Professor Tschirch agrees that there could be no danger.

"It is right that the public should know that though 20 million tons of these peas are consumed annually there has never been a single case of injury resulting from the eating of such peas proved before any court.

"This case shows the necessity for some amendment of the present adulteration laws. The defendant in the case bought the peas and sold them exactly as he received them, as thousands of other grocers do. He had no knowledge that they were in the slightest degree injurious, and yet he has been convicted, and has to bear very heavy costs."

It will be seen that our contemporary informs an anxious public that it should know that "twenty million tons of these peas are consumed annually." We wonder if the *Star* has any idea of the meaning of twenty million tons! But it is right that the public should know the statement is bosh.

### A GOOD SUGGESTION.

AN interesting suggestion has been made by Mr. F. W. Alexander, the medical officer of a squalid London district, which will bear application to the large provincial towns. Any ordinarily observant person must have noticed the great number of vacant spaces which have been left in the course of building, and which are now devoted to the accumulation of unsightly rubbish. These plots are at present practically useless until it is found necessary to pull down the adjoining structures, when they may possibly be turned to account for the purposes of extension. Mr. Alexander, in his report to the vestry, strongly urges that these, together with backyards and other available bits of ground, should be dug up, manured, and planted with some hardy species of plant or tree. The idea is decidedly worthy of consideration, not only because the conversion of these deserts into gardens would be an æsthetic and hygienic gain, but because gardening is a pleasant and healthy occupation, which can be carried on with



surprisingly little expense, and at which poor people whose hearts are in the work often succeed as well as wealthy amateurs. Some discrimination would have to be shown in the selection of plants and trees for the experiment, but probably a few, at any rate, could be found which would flourish even in the adverse environment of a smoky atmosphere and poor soil.

#### WHITEWASHING LONDON WATER.

It is a great pity there is no muzzling order in force for our Dewars, Abels, and Bramwells, as, if there were, rubbish like the following would not be tipped at House of Commons' Committees:—

"Professor Dewar, giving evidence before a Committee of the House of Commons on the Chelsea Water Bill last week, pointed out that water was not unfit to drink because it contained microbes. A piece of butter the size of the finger-tip contained 5,000,000 microbes. The human mouth in a normal condition contained 40 kinds of microbes, and the human body was full of them. Microbes might be in Ditton water even when filtered, but they did not render it unfit for drinking."

Truth may be in Prof. Dewar's evidence.

#### TINNED FOOD TESTS.

THE *Grocer's Criterion* says:—"Reject every article that does not show the line of resin around the edge of the solder of the cap, the same as is seen on the seam on the side of the can. Reject every can that does not have the name of the manufacturer or firm upon it, as well as the company or town where manufactured. Standards have all this. When the wholesale dealer is ashamed to have his name on the goods, fight shy of him. Press up the bottom of the can. If decomposition is set in, the can will rattle the same as the bottom of the oiler of your sewing machine will do. If the goods are sound, it will be solid and there will be no rattle in the tin. Reject every tin that shows any sign of rust around the cap on the inside of the head of the can. If housekeepers are educated on these points, then the muriate of zinc amalgam will become a thing of the past."

#### SINISTER ADVICE.

SIR,—May I give some practical advice to your readers? Some years ago I was connected with a wholesale house who also did a retail trade. We there sold large quantities of "Petits Pois" to our regular customers, but the assistants had special instructions never to supply these goods to any stranger. By this means we kept up our sales, and never ran the risk of a prosecution.

I am, &c.,

London, May 15.

J. A. S.

[The above appears in last week's *Grocer*.]

#### AN UNSATISFACTORY MILK SUPPLY AT ST. HELEN'S.

AT a meeting of the St. Helen's Health Committee, on May 13, the Medical Officer (Dr. Robertson) reported that the condition of the cowsheds in St. Helen's was improving since the adoption of regulations in regard to them, yet many cowsheds were overcrowded, others were imperfectly ventilated, and yet others were not kept in a clean condition. Cleanliness in milking was not carried out as it ought to be, with a result that probably little of the milk which was supplied to St. Helen's was free from contamination from the hands of the milkers. In a few of the cow-houses cleanliness was observed, but in nine-tenths of the cow-houses, where with filthy hands, wetted with milk, a dangerous contamination took place. The methods of delivery and storage of milk in the small milkshops and in the cottages of St. Helen's was not all that could be desired, and contamination was undoubtedly produced in that way.—The report was adopted, and ordered to be printed.

#### MEAT MARKING.

ON behalf of the Committee of the London Central Meat and Poultry Markets Association, Mr. Alban Gibbs has presented a petition against the Agricultural Produce (Marks) Bill. The petitioners allege that the provisions of the measure are "absolutely impracticable and quite impossible of application to the meat trade, and are also much in restraint of legitimate and necessary trade transactions." They contend, further, that in the form in which the meat reaches the market "it is impossible for any one to say with certainty whether it is the product of home-grown animals or of foreign or colonial animals," and urge that in the event of the Bill becoming law, "any salesman might any morning, without his fault, consent, or knowledge, be in the position of an offender under the Act, and liable to heavy penalties."

#### MILK AT TWOPENCE A QUART.

As a result of the severe competition among the milk-sellers at Northwich, and in consequence of the early spring and the plentiful supplies of milk, the price has been dropped to 2d. per quart, the lowest rate at which milk has ever been retailed in the country.

#### SURREY COUNTY COUNCIL AND THE FOOD AND DRUGS ACT.

MR. GOSSET had given notice to move: "That an extended list, embracing the articles enumerated in the annual report of the Local Government Board on 'Sale of Food and Drugs Act' be purchased and tested, and the results published in the appendices of the Inspector's reports." When he rose to speak, however, it was very late, and as a quorum did not remain the Chairman said the motion would take precedence of the business at the next meeting.



## ISLE OF WIGHT COUNCIL AND FOOD ANALYSIS.

THE Sale of Food and Drugs Committee reported as follows:—

Mr. Otto Hehner (Public Analyst) reported that during the first quarter of the present year 9 samples of seidlitz powders, 8 of olive oil, and 8 of butter were submitted to him for analysis. One of the samples of seidlitz powders did in no way comply with the requirements of the British Pharmacopœia, and one of the samples of olive oil was destitute of olive oil, consisting entirely of other vegetable oils. The samples of butter were all genuine. Of the 25 samples analysed, therefore, two were not genuine. The percentage of adulteration, hence, was only 8, or materially smaller than the average for the whole country.—Dr. Dabbs asked upon what principle of selection the police proceeded in the matter of getting food analysed. He wished to ask if such articles as vinegar, jam, bread, and alum had come under the notice of the police. He had a very serious reason for asking, and asserted that much of the vinegar sold in shops was not malt vinegar at all, and was extremely disagreeable in its effects. He was not at all sure that the analysis of food and drugs was done as it should be done. For the large sums of money they paid for the analysis of such articles as were analysed he, as a sanitarian, was not at all satisfied, and it could only be done satisfactorily by paying a fixed salary, and by submitting an indefinite number of articles for analysis. He should also like to know what the police did in the matter of articles selected.—The Chairman said he believed it was left entirely in the hands of the Chief Constable. Perhaps it was as well that the public did not know what articles were to be selected for future analysis. As to the number of samples sent, he believed that the arrangement with the Public Analyst was that he was not to have more than 25 samples a quarter at the salary they were now paying him. Whether that was a good system he could not say.—Admiral de Horsey suggested that beer be included in the articles sent for analysis. (Laughter.)—Mr. Sweetman: You will find it all good. (Renewed laughter.)—Mr. Death complained that the police always went for the little men and the little women, and never troubled the big shopkeeper.—Rev. Burnaby said it was quite a touch and go with the committee whether they put a strong recommendation in their report or not.—The report was then adopted.

## AYRSHIRE AND ANALYSES.

MR. THOMAS CURRIE, chief district sanitary inspector, has issued the fifth annual report of the Ayrshire County Council. In it he states that 84 samples were taken under the Food and Drugs and Margarine Acts, and in each of the 11 cases in which proceedings were taken a conviction was obtained. Mr. Currie expresses his dissatisfaction with the manner in which the analyst makes out his certificates.

## REVELATIONS IN THE SAUSAGE TRADE.

ANOTHER important prosecution under the Public Health Act took place at the Halifax Borough Court, on May 15th, the defendant being Lewis John Hanson, pork butcher, of 9, Market-street, who was summoned at the instance of Mr. J. M. Carnie, meat inspector to the Halifax Corporation, for having in his possession a quantity of meat which was in such a condition as to be unfit for human food. Mr. Tordoff appeared on behalf of the prosecution, and the defendant was represented by Mr. Storey.—Mr. Tordoff stated that on Wednesday, the 6th inst., Mr. Carnie called at the defendant's shop shortly after ten o'clock in the morning, and went

downstairs into the cellar, which was used by the defendant for the purpose of manufacturing sausages and pork pies. In the cellar he found a mincing machine, and also several tubs in which meat was kept. In one of these tubs the Inspector found a piece of meat which he partly lifted out of the water. The smell was so bad that he asked defendant to take it out of the tub, and he then found that it was putrid. Mr. Travis was sent for, and on his arrival the contents of the tub were emptied. The result was that the whole of the meat was found to be putrid. The meat was seized and immediately sent to the medical officer, who certified that it was unfit for human food, and Mr. T. S. Scarborough, J.P., granted an order for its seizure. The defence had been raised when the meat was seized that it was not intended for human food, and he would therefore like to call attention to one or two circumstances which he regarded as very strong evidence that the meat was intended for human food. In the first place, defendant was a pork butcher, whose special business was to prepare meat to sell for food, and it was found in a cellar where meat was actually prepared for human consumption. It was also, at the time it was seized, in pickle. Moreover, when the meat was taken out of the tub defendant made this remark, "I may put some of that out," and when asked why, he said, "It may be too salt." That, he contended, suggested that some portion of it was intended for human food. It was said that the meat was intended to feed pigs, but he understood that pigs did not eat salt pork. (Laughter.)—Mr. J. M. Carnie stated that when he lifted the pork from the tub he noticed that the muscles separated, and that raised his suspicion. Mr. Hanson said, "I may be throwing some of that out some day," and when witness inquired why, he replied, "It will be a bit soft, won't it?" Defendant then said, "It smells a bit," and witness responded, "It does, very badly." The meat was part of the carcase of a pig, evidently a very old one, and weighed altogether about 9 stone 9 lbs.—Cross-examined by Mr. Storey, witness said the defendant, at the time of his visit to the shop, appeared to be sober, but he believed he must have been very bad the night before. Brine, he admitted, did sometimes go bad in hot weather, especially when there was bad meat in it. (Laughter.)—Dr. Whitcombe deposed to having examined the meat, and stated that the flesh was separating into layers. There was no cohesion, and the flesh fell apart without any pressure. The meat gave off an offensive odour—he would describe it as a putrid odour—and the nearest familiar smell to which he could compare it was rotten eggs. (Laughter.) It appeared to him that the room smelled even more than the meat. The first effect of the consumption of such meat would probably be an attack of vomiting and diarrhoea. This would probably be followed by dysentery and might give rise to typhoid fever. The smell was so bad that he took a dose of quinine when he got home. (Laughter.)—Mr. Storey said he did not dispute that the meat was bad, and he could not sympathise with any man who would attempt to foist on the public meat that was diseased or in any way unfit for food. Unfortunately, in this case he would have to make one or two admissions which did not reflect very creditably on the defendant, but these had no reference to the preparation of the condemned meat for human consumption. First of all, the defendant had been drinking, and had left his business in charge of an assistant, who had left the defendant's premises two days before in the condition in which the inspector found it, otherwise that case would never have been there. The inspector admitted that the defendant had stated the meat was not intended for human food, but unfortunately the onus of proof lay with the defendant, whose mouth, as well as his wife's, was closed by the law. Defendant, however, promised to give up drinking and to pay closer attention to business.—It appeared that defendant had been fined £10 in 1883 for a similar offence, but the magistrates, having regard to certain circumstances in the case, considered that justice would be met by a penalty of £3, and 16s. costs, with the alternative of one month's imprisonment.

## YARMOUTH SHOPKEEPERS FINED.

At Yarmouth Police Court, on May 13, George Newstead, shopkeeper, Gorleston, was summoned under the Food and Drugs Act. The Town Clerk (Mr. T. M. Baker) prosecuted, and Mr. G. H. L. Blake defended. The Inspector of Nuisances stated that on April 15 he visited defendant's shop in Trafalgar-road, and asked to be supplied with a pound of butter. Mrs. Newstead pointed to a lump



and several half pounds of butter, and asked him which he would have. She said she sold the lump butter at 1s. a pound, and witness said he would have a pound. On it being handed over to him he told her he had bought it for analysis, and she then told him it was a mixture. Subsequently he sent a portion to the public analyst at Norwich, who discovered it contained 14 per cent. of genuine butter fat, 69 per cent. of foreign fat and water, and 16 per cent. of curd and salt. Mrs. Newstead stated there were two lots of butter on the counter, and she told the Inspector that one was farm butter and the other "shop butter," or a mixture. He replied that shop butter would do, and she accordingly sold him a pound. A fine of 20s. and costs was inflicted.—Susannah Drayson, shopkeeper, Gorleston, was also summoned under the above Act. The Inspector said that on April 8th he visited the defendant's shop in Beccles-road, Gorleston, and asked her if she sold coffee. She replied that she did, and quoted prices ranging from 1s. to 1s. 4d. per lb. Witness bought a pound, and on telling her it was for analysis, she said it was a mixture, and further expressed the opinion that he was a mean, contemptible man for taking such an advantage of her, saying he ought to have informed her of the purpose for which he wanted the coffee. The defence was that the Inspector did not ask for pure coffee, or she would have told him she did not sell it. A fine of 10s. and costs was imposed.

### MILK IN WILTSHIRE.

ADULTERATION defences are becoming every day more ingenious, as witness the following cases last week at Swindon:—

Henry Gilling, of the Creameries, Swindon, was summoned by Mr. Sam Smith, the local inspector of the Wilts County Council under the Weights and Measures Act, for selling two glasses of new milk with 15 per cent. of its natural fat abstracted, on April 18.—Mr. H. Bevir appeared to prosecute, and Mr. A. E. Withy defended.—Wm. Henry Sawyer, assistant to Mr. Smith, proved the purchase.—Mr. Smith said that after the purchase had been made he went into the Creameries and took possession of the article. He told the young person who sold the milk, a Miss Tyler, what he wanted it for, and took it to Mr. Gatehouse, the public analyst, the same day. He put in Mr. Gatehouse's analysis.—For the defence, Mr. Gilling was called, and said he made a contract with a Mr. Partridge last Michaelmas to supply him with milk guaranteed to contain all its cream. The milk supplied to Mr. Smith was taken from a churn which had just arrived from Mr. Partridge's, and it was quite warm when Mr. Smith called at eight o'clock in the morning.—In cross-examination by Mr. Bevir, defendant said he had no written contract with Mr. Partridge.—Miss Emily Tyler, assistant to defendant, gave formal evidence as to the sale of the milk.—George Partridge, farmer, of Walcot, Swindon, said he saw the milk sent to Mr. Gilling's. He assisted in the milking, and saw the milk sent away from the farm. He never extracted any cream. Some of his cows were in very good condition, but others were not doing so well. He had had a sample of the milk analysed since Mr. Smith took a sample, but he had not got the analysis with him. He had no contract with Mr. Gilling, nor had he ever given a warranty.—Henry Brewer, a labourer in Mr. Partridge's employ, proved delivery of the milk from Walcot to the creamery.—This was all the evidence, and Mr. Withy, for the defence, urged that as defendant had a warranty label with the milk he was not liable under the Act. The labels on the churns of milk sent by Mr. Partridge stated it to be "warranted pure unskimmed milk." He argued that these words were not merely a description of the milk, but constituted a warranty. He proceeded to deal with the facts, and asked the Bench to dismiss the case on that point. Mr. Withy next argued that analyst's certificates were not infallible, as different standards were set up. According to one standard there was in the milk only a deficiency of two per cent. of fat. He further contended that as the milk was taken from the cow so it was sold to Mr. Smith. Mr. Bevir replied to Mr. Withy's arguments, and the Bench retired to consider the case. Upon their return the Chairman said the Bench would convict upon the facts, but they would only impose a fine of 10s. and 11s. costs. They agreed to state a case upon the question of warranty.

Charles Rixon, dairyman, of Swindon-street, Highworth, was summoned for an exactly similar offence on

the 20th April last. In this case the milk was one pint in quantity, and there was 25 per cent. of fat abstracted.—Mr. Bevir prosecuted, and Mr. Withy defended.—Mr. Smith and his assistant stated the facts.—For the defence Mr. Rixon was sworn, and said he supplied the milk to Mr. Smith just as he had received it from his cows, about half-an-hour previous to the time Mr. Smith asked for it.—Robert Baldwin, labourer, in the employ of defendant, said he milked the cows.—Mrs. Ann Baker, sister to defendant, having given evidence, Mr. Withy asked the Bench to dismiss the case, as the witnesses for the defence had given a very straightforward account of the milk not being interfered with from the time it was taken.—The Bench again adjourned, and on returning into Court, the Chairman said the Bench had carefully considered the case, and they could not see how they could do otherwise than convict.—Defendant would be fined 10s. and 11s. costs.

Emma Trow, farmer, of Wootton Bassett, was similarly summoned. In this case, the milk—one pint—was purchased on April 18, and it was found to have 33 per cent. of its natural fat abstracted.—Mr. Bevir prosecuted, and Mr. Withy defended.—Evidence of purchase was given by a lad named Rolf William Curtis, and by Mr. Smith, the Inspector.—Mr. Withy called a man named George Sellars, in the employ of the defendant, who said the milk was supplied just as it came from the cows. The different seasons affected the quality of the milk.—Mrs. Trow and her grandson, Harry Street, having given evidence, Mr. Withy said if the Bench convicted it must mean that they disbelieved the evidence of the witnesses, all of whom said nothing had been abstracted from the milk.—The Bench convicted, and imposed a fine of 10s. and 11s. costs.

William Hancock and Archie Hancock, farmers, of Fairfield Dairy, New Swindon, were similarly summoned, the milk in this case having had 40 per cent. of its natural fat abstracted. The facts having been stated, Mr. Withy, for the defence said his clients had a sample of the same milk analysed by Mr. Stokes, a public analyst, who stated that 24 per cent. of the natural fat had been abstracted.—Mr. Bevir said the two analyses showed the same total of solids.—One of the defendants, Archie Hancock, said the milk was supplied from Messrs. Cox and Hall. The milk was standing all night, and those who had some of the first lots of milk had most of the cream.—The Bench convicted, and imposed a fine of 10s. and 9s. costs.

### A DIRTY DAIRY.

At Thames, on May 15, Isaac Handel, milk-seller, of Backchurch-lane, Whitechapel, was summoned for not keeping a milk utensil clean, and also for allowing the floor to be in a dirty condition.—On the 10th ult. the County Council's inspector visited the place and found the floor and two milk utensils in a very dirty state. The floor had not been cleaned for weeks.—Handel said the house was very old, and the landlord would not do anything to the place. The floor had now been cleaned.—Mr. Dickinson told the defendant he had rendered himself liable to penalties amounting to £10. It was very necessary that such places should be kept clean, and defendant, who had twice been previously cautioned, would be fined 40s. and 2s. each case, or £4 8s. in all.

### SMALL MARGARINE FINES.

At Liverpool, on May 13th, John H. Evans, Whitefield-road, and Joseph Birkett, Belmont-road, were each fined 10s. and costs for having exposed for sale margarine that was not properly labelled. The cases were proved by Inspector Baker.

### MILK AND BUTTER ANALYSES IN DUNDEE.

SPECIAL reports from the City Analyst in regard to milk and butter were submitted, on May 12, to the Sanitary Committee of Dundee Town Council, and in going over the samples it was found that all were genuine, and that therefore no prosecution could be authorised.

It would be interesting to know how the samples were collected.



## STAFFORDSHIRE AND ADULTERATION.

THE following quarterly report of the County Analyst was presented and considered, viz.:—

## SALE OF FOOD AND DRUGS ACT AND MARGARINE ACT.

During the last quarter the county inspectors have submitted to me for analysis under the above-mentioned Acts 316 samples, of which 284 I have passed as genuine, and condemned 32 as adulterated. This gives a percentage of adulteration on the samples submitted of 10·12, against 10·08 for the corresponding quarter last year. From North Staffordshire the samples were 133, giving eight adulterations, and from South Staffordshire 183, giving 24 adulterations. Thus the samples from South Staffordshire have again been found very much worse than those from the North. Fifteen different kinds of articles have been analysed, but in six kinds only adulteration has been found—viz., in butter, coffee, milk, sago, seidlitz powders, and whisky. Butter: Out of 124 samples 10 have been found adulterated with oleo-margarine from 10 to 95 per cent. Two of these samples were submitted by private purchasers through the inspectors; these contained 10 and 20 per cent. respectively of fat foreign butter. Coffee: Out of 12 samples one was mixed with chicory to the extent of 19 per cent. Milk: 107 samples analysed, and nine were pronounced adulterated—viz., three creamed and slightly watered, one slightly creamed and slightly watered, one decidedly watered and slightly creamed, three decidedly watered only, and one was decidedly creamed only. Two of the watered samples were submitted by a private purchaser through the inspector. Seidlitz Powders: According to the Pharmacopœia, these should be in white paper 38 grains tartaric acid, and in blue paper 160 grains, consisting of 120 Rochelle salt and 40 of bi-carbonate of soda. Of the four samples submitted, two were practically correct in composition and weight, and were therefore passed as genuine, but two had to be condemned—one because the relative proportion of acid to alkaline powder was wrong, the acid being 10 grains too much, and the alkaline powders 17 grains too little. The alkaline powders were correctly compounded, consisting of 25 per cent. bi-carbonate of soda and 75 per cent. of Rochelle salt. In the other sample, although the powders were practically correct in weight, the alkaline powders were wrongly compounded. These contained 69 grains bi-carbonate of soda instead of 40 and 87 grains of Rochelle salt instead of 120. I do not think actual fraud is indicated nor perhaps much harm threatened in either case, but it is important that medicines be compounded carefully and correctly, and if carelessness is exhibited in one preparation it is to be feared in another, where danger to health, if not actual loss of life, may result. Sago: Six samples submitted and not a sago amongst them, all being put under the head of adulterated articles, although really no adulteration occurs, inasmuch as each sample consisted of tapioca pure and simple. There does not appear to me to be actual fraud, because tapioca is as dear as sago and of the same dietetic character, but the latter, being a shade brown in colour, is not taken by the public so readily as pearl tapioca made in the same form. Whiskies: Four samples were found unduly diluted with water, but no other adulteration was detected. This concludes the list of adulterated articles, but, perhaps, I may be expected to make a few remarks on two samples—viz., British sherry classed as genuine, because I know of no definite formula for such article. The samples in question consisted mainly of fermented sugar and water, flavoured something like sherry. The one contained 27 per cent. of proof spirit and the other 19½ per cent. Each contained a little salicylic acid, the alcohol present not being enough to preserve them.—I am, etc.,

E. W. T. JONES.

Mr. E. W. T. Jones also submitted the following report: As your district analyst under the Fertilisers and Feeding Stuffs Act, I beg to make the following remarks beyond sending you the tabulation required by the Board of Agriculture: "I have received during the quarter five samples, one a feeding stuff known as oilcake, which used to mean linseed cake—and no doubt most farmers still think it does—but now it is known by the trade to indicate a compound cake. The sample in question was described on the invoice as 'oilcake made from linseed and other feeding seeds,' and stated to contain 10 to 12 per cent. of oil and 25 to 28 per cent. of albuminoids. My analysis showed it to contain linseed, sunflower seed, etc., giving 10 per cent. of oil and 25·10 per cent. of albuminoids, and so it was up to the guarantee on the invoice. The other four samples analysed were fertilisers, but the invoice sent did not comply with the first section of the Act, by stating

certain percentages according to the character of the material. Analysis proved the samples to contain—Kainit, 12·08 per cent. potash; superphosphate, 29·46 per cent. soluble and 3·77 per cent. insoluble phosphate; nitrate of soda, 15·01 per cent. nitrogen; basic slag, 29·74 per cent. phosphate of lime. The percentages are about the usual ones for the respective trade articles, but I do hope that in the case the committee will at any rate intimate to the seller the necessity of strictly complying with the provisions of the Act, because without a guarantee on the invoice the analyst cannot certify, as desired by the Board of Agriculture, 'whether the invoice or description was false, etc.' and, too, in many cases it is impossible to tell whether the purchaser has got what he expected to get."

It was resolved that this committee desires to direct the attention of the Council to the report of the County Analyst as to the sale of feeding stuff as oilcake, and the importance of purchasers specifying the particular cake which they intend to buy, such as "linseed cake," etc., and not simply as "oilcake."

It was also resolved that the inspectors be directed to caution grocers as to the selling of tapioca in substitution for sago.

Mr. W. G. Bagnall, in moving the consideration of the report of this committee, said he was glad to hear the remarks which the Chairman of the Contagious Diseases (Animals) Act Committee had made in regard to the spread of infectious disease and the precautions which ought to be taken, as those remarks showed how necessary it was to embrace the whole of the county in any scheme which might be prepared for securing proper isolation hospital accommodation. At the October meeting of the Council, the Sanitary Committee asked for the sanction of the Local Government Board to proceed against Mr. Hardman for polluting the river Trent, and he then intimated that it was possible that an amicable arrangement might be come to. As the result of a communication from Mr. Hardman's solicitors, the County Medical Officer visited his works and made certain suggestions, which Mr. Hardman had since adopted, and consequently the matter might be considered as at an end, and he had every reason to believe that the pollution would not occur again. In dealing with the estimates, which were chiefly required for covering the fees of the County Analyst under the Food and Drugs Act, the committee had carefully considered whether or not any economy could be made, and he was able to give them some interesting figures as the result of their inquiries. Under Quarter Sessions, the cost of analysing samples was £600, which amount was seldom exceeded, but if they took the first three years under the Sanitary Committee—viz., 1890-91-92, they found the expense of analysing samples was £881, and if they took the last three years the expense was £1,166. Nine hundred and fifty more samples had been analysed during the last-named period at an additional cost of £285. They must remember, however, that the fees and fines which were received were applied in reduction of the expenses. If they took the first three years to which he had referred the fees and fines amounted to £359, and in the last three years to £706. Therefore, although the Sanitary Committee had spent £285 more in analysing samples, it really cost the county £62 less. There was no doubt that the county was freer from adulteration and fraud than it had ever been before, and it should be rather gratifying to know that this state of things had been brought about at a less cost. He should like to say one word as to the Fertilisers and Feeding Stuffs Act, which came into operation on the 1st January, 1894. It was felt at first that it was a most complicated measure, and in order to induce purchasers to help in making it operative it was decided that of the guinea which the county analyst received for each sample only 2s. 6d. should be charged to the purchaser, while 18s. 6d. should be charged to the county, but only 11 samples had been submitted. There was one point he should like to emphasize. When farmers bought oil-cake, they evidently believed that they were buying linseed-cake, whereas what was known as oil-cake was generally a compound of linseed and other feeding seeds. Therefore, if farmers wished to buy linseed-cake they must ask for linseed-cake, and then that only could be supplied.

## UNWHOLESOME FISH AND MEAT AT ST. HELEN'S.

At St. Helen's, on May 15, several cases under the Public Health Act were called. John Hughes, of Platt-lane, Wigan, had been summoned for exposing for sale eighty-five tins of unwholesome lobster; William Rylands and Margaret Rylands, 26, Peter-street, St. Helen's, for having in their



possession for sale nine tins of unwholesome lobster; Thomas Evans and Thomas R. Prodger, trading as Evans and Prodger, 135, Westfield-street, for having in their possession for sale seven tins of unwholesome lobster; and Emma Rhodes, 69, Napier-street, for having in her possession for sale one tin of unwholesome lobster. The Town Clerk (Mr. Jeeves) prosecuted; Hughes was defended by Mr. T. Swift, of Liverpool. Hughes, who had been convicted at Wigan, was fined £10 and costs or one month; Margaret Rylands and Emma Rhodes, who obtained tins from Hughes, were fined 5s. and costs each. The summons against William Rylands was withdrawn. Evans and Prodger, defended by Mr. Riley, were dismissed on payment of costs.—Robert Tunstall, 75, Liverpool-road, butcher, was also summoned on two informations—first, for depositing for the purpose and preparing for sale at the public abattoir, three pigs; second, for depositing for the purpose of sale at his business premises two and a-half pigs' plucks, the said pigs and plucks being diseased and unfit for the food of man.—The Town Clerk, who prosecuted, stated that the animals had been suffering from tuberculosis.—Meat-inspector Smirthwaite gave evidence as to his examination of the pigs at the abattoir, and to finding the plucks at the shop.—For the defence Mr. Riley contended that defendant had acted in a perfectly candid and open manner by taking the pigs to the public abattoir to be slaughtered instead of doing so on other premises. It was the usual custom for the plucks to be brought away for immediate sale when a Friday intervened.—On the first information the Bench imposed a fine of £5 and costs; the second information was withdrawn.

#### BEER.

At Lambeth, on May 18, Henry Upward, a beer retailer, of Walworth-road, was summoned by the Excise for diluting beer.—Mr. Hawkins, from the Solicitors' Department, Somerset House, appeared in support of the summons.—Mr. H. I. Sydney, who defended, said his client had been in business only six months. At the time in question he was short of stout and poured some beer in, the effect of which was to reduce the specific gravity.—Mr. Denman fined the defendant £10.—Edward Craddock, a licensed victualler, of South-street, Walworth, was fined £20 for a similar offence.—Mr. Sydney, who represented the defendant, said his client had been in business 13 years and he never had a complaint against him before. At the time this occurred he was ill, and left his son in charge of the cellar.

#### LARD.

At the Bridgend Police-court, on May 9, William Richards, grocer, Nantyffylon, Maesteg, was summoned for selling adulterated lard. Mr. Hughes, for the defence, argued that the stearine which was alleged to be in the lard was not injurious to health, neither was it added to increase the bulk. Mr. D. H. Lloyd, grocer, Bridgend, gave evidence in support of this statement, and the case was dismissed.

#### VINEGAR.

At Warminster, on May 8, James Charles Lee, Market-place, Warminster, was summoned for selling diluted vinegar. Inspector Beardsley visited defendant's shop on

April 7 and purchased half a pint of "malt vinegar." On April 17 he visited the shop a second time, and asked to be supplied with a pint of vinegar, requesting the assistant to take it from a cask that had not been tapped. This was done, and he sent a sample to the public analyst. The certificate for the first sample stated that the vinegar was diluted to the extent of 22 per cent. of water, while the second sample was certified to be pure. Mr. Sandford informed the bench that both samples of vinegar were obtained by defendant from Messrs. Panter, Woodward and Co., of Bristol. Mr. Lee gave evidence, and stated that the first sample was taken from a cask that had been tapped for three months, and that naturally caused the vinegar to deteriorate. Mr. Woodward, J.P., a partner in the firm of Messrs. Panter, Woodward & Co., stated that he had come to the conclusion by analysis that the vinegar had not been diluted by water, but had deteriorated by decomposition. The witness gave practical reasons for this belief. The analyst, Mr. Gatehouse, said that the condition of the vinegar could not be produced except by 22 per cent. dilution of water. The Bench considered the case proved, and intimated that they considered that water had been added to the extent certified by the analyst. They also said they had no reason to believe that the manufacturers did not send out the vinegar in a proper state. Mr. Lee was fined £3 including costs.

#### WATER AT SPIRIT PRICES.

At the Castle Eden Police Court, a publican belonging to Trimdon Colliery, named John Carter, was summoned by Mr. B. Scott Elder, Chief Inspector, for selling to his assistant (George Wilson) a pint of whisky adulterated to the extent of 5 per cent. more water than allowed by law.—Mr. W. H. Bell, of Sunderland, who defended, contended that as his client had notices displayed in his bar and drinking-rooms that all spirits sold were "diluted," but not below half-proof strength, the onus was thrown on the purchaser, who might please himself whether he bought or not, and quoted cases in support.—Mr. Elder replied that the attention of the purchaser must be called to the notices at the time of buying.—Defendant was convicted, and fined £2 and costs.

**A COSTLY MISTAKE.**—William Raffle, publican, of Old Trimdon, was summoned at Castle Eden Police Court by Mr. B. Scott Elder for selling a pint of whisky containing 10 per cent. more water than the law allows.—Defendant said he made a mistake in mixing.—A fine of £3 and costs was imposed.

**MRS. LOUISA TITCOMBE**, wife of the manager of the Cock and Hoop public-house, West-end-lane, Hampstead appeared at Hampstead Court, on May 13, to answer charges of having sold to William Hutton Edmonds, one of the Hampstead Vestry's Inspectors, rum and whisky adulterated by the admixture of water.—The certificates of the analyst (produced) showed that both the samples contained seven per cent. of water over and above that contained in whisky or rum of the legal strength of 25 under proof.—Mr. Moore produced a large printed notice, which read: "All spirits sold in this establishment are diluted, but not below half-proof strength."—Witness replied that he did not see that notice, and, further said he would swear that it was not in the bar.—The defendant was sworn.—Mr. Smith (chairman): How long has your husband been the manager?—Defendant: Nine years.—Mr. Smith: And has he been in the habit of applying for

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the licence?—Mr. Moore: I am afraid I must advise my client not to answer that question.—Mr. Clabburn: I represent the brewery; the matter will be fully considered.—Mr. Smith: It was very irregular.—Defendant and a customer deposed that the notice was exhibited behind the bar.—Mr. Smith said he did not think the notice covered the case; 42 and 43 Vic. governed it. Proof spirit was where the alcohol and water were in almost equal proportions, there being in 100 parts 49.2 of absolute alcohol, and 50.76 of water. The publican was allowed to reduce it another 25 per cent., making 75 per cent. of water, and only 25 per cent. of alcohol. The analyst's certificate showed that defendant had sold spirit containing 82 per cent. of water, and only 18 per cent. of alcohol.—Defendant would be fined £20, or in default three months' imprisonment.—The money was paid.

At Kirkby, James Thompson, landlord of the Clifton Arms Inn, Warton, was summoned for selling rum 34 per cent. under proof, and containing 9 per cent. excess of water.—On the 9th ult. P.S. Fenton visited the inn, and was supplied with a pint of rum, which, upon analysis, was found to be under proof.—Defendant said he had left the rum uncorked for one night, and denied that the rum was taken from a cask, as alleged by the police.—Fined 5s. and costs.

At the County Police Court, Huddersfield, on May 19, Jane Lumb, keeper of the Two Dutchmen Inn, Marsden, was fined £1 and ordered to pay £1 4s. 6d. costs for having sold whisky containing 9.3 parts excess of water.—Betty Shaw, who keeps the Old Ram Inn at the same place, was ordered to pay a fine of £1 and £1 3s. costs also for having sold whisky containing too much water.—The offences were proved by Mr. Herbert Newbold, West Riding Inspector of Food and Drugs.

At West Bromwich, on May 19, Hannah Whitehouse, of the Boilermakers' Arms, Ryder-street, Greet's Green, was charged, at the instance of the Corporation, with selling samples of whisky and gin on the 13th of April, which were below the standard of strength required by law. Mr. G. W. Davies (inspector under the Food and Drugs Act) proved the case, and defendant was fined £3 17s., including costs. Mr. J. S. Sharpe defended.—George Hardy, of the Royal Oak Inn, Whitehall-road, West Bromwich, was charged with selling a quantity of rum below the standard strength on the 13th ult. Mr. Davies proved this case. Defendant was fined £2 14s. including costs.

### MILK.

INSPECTOR TYLER summoned Albert Liddard, a milk-seller of South Acton, at Brentford, on May 9th, for having sold milk which was adulterated to the extent of 12 per cent.—Inspector Tyler said the defendant told him that the milk was sold in the same condition as when he received it from the wholesale dealers, and that he sold such a small quantity that he did not think it was necessary to protect himself by obtaining a warranty from the dealer.—A fine of 20s. and costs was imposed.

### MILK ADULTERATION AT KINGSWOOD.

At Lawford's-gate Police-court on May 18, Francis Hall, of Kingswood, was summoned for selling milk adulterated with 27 per cent. of water. The defendant, whom Mr. H. H. Gregory defended, pleaded not guilty. P.S. 111 G having given evidence as to purchasing the milk, the analyst's certificate was produced, and showed that the sample was very much adulterated. Mr. Gregory, for the defence, admitted the correctness of the analysis, but said that the milk sold was not his client's. The defendant had purchased two gallons of milk from another man, and sold it immediately on receiving it. It was this milk from which the sample was taken. The Bench fined the defendant 40s. and costs.—George Bush, dairyman, of Kingswood, who admitted his guilt, was also fined 40s. and costs for selling adulterated milk.

### "LOVELY MILK."

At the Thames Police-court, on May 16, Henry Mack, dairyman, of 231, Old Ford-road, was summoned by Mr. Eustace Mivers, Inspector under the Sale of Food and Drugs Act for the Poplar Board of Works, for selling milk with 90 per cent. of the cream abstracted.—Mr. George Hay Young, who prosecuted, said on the 17th ult., a pint of milk,

for which a penny was paid, was bought from defendant's boy, who was calling out, "Lovely milk," "Beautiful milk." After the purchase had been completed the inspector was told it was skim milk.—Mr. Mivers' man, on giving evidence, denied that he was told the milk was "separated."—On behalf of the defendant, Mr. F. Deakin said the character of the milk was disclosed at the time of the purchase. It was well known that pure milk could not be purchased at 2d. a quart. Fresh customers were always told they were purchasing skim milk.—Mr. Dickinson said there was no doubt defendant only sold separated milk, but unfortunately for defendant his boys called, "Fine milk," "Beautiful milk." Defendant would be fined 20s. and 23s. costs.

### MEAT.

At Bilston Police Court, on May 19, James Bentley, butcher, of Park-road, Hockley, Birmingham, was summoned before the Stipendiary (Mr. Neville) for offering for sale in the Bilston Market 56 pieces of beef, five joints of mutton, and 6lb. of beef trimmings, which were unfit for human food.—Mr. Pratt prosecuted, and Mr. R. A. Willcock defended.—Mr. Pratt stated that Mr. W. Hughes, the inspector of nuisances, on visiting the market found the meat on the defendant's stall, and on examination discovered it was in a decomposed condition. It was afterwards condemned by Mr. J. Harper, after an examination by Mr. Bairley, the medical officer.—For the defence, it was contended that the meat had been frozen, and was affected by the hot weather.—The Stipendiary characterised the case as a bad one, and imposed a fine of £10 and the costs, or two months' hard labour.

At Guildhall, London, on May 19, Richard Spearman, described as of Westward Ho, Norham, Devon, was charged before Mr. Alderman Truscott with sending to the Central Market meat which was unfit for human consumption. A former conviction of £20 for a similar offence having been proved, the accused was sent to prison for three months with hard labour.

### COPPERED GREEN PEAS.

At the Carnarvon Borough Police Court, on May 18, the police summoned the Star Supply Company for selling green peas adulterated with  $2\frac{1}{2}$  grains to the pound of sulphate of copper. The case had been adjourned pending the decision on appeal of a similar case in England. Mr. Lloyd Carter, for the defence, said that as the appeal had gone against the appellants, he would plead guilty, and in view of the fact that the sale of the peas had been stopped, he asked that only a nominal fine should be imposed. There were two charges, and the Bench inflicted a fine of 5s. and costs in respect of each.

### WORKHOUSE MILK.

THE Clerk of the Middlesex County Council, in a reply to a communication from the Edmonton Board of Guardians, stated that directions had been given to the County Inspector to take samples of milk at the workhouse and schools in the ordinary course of his duty. It did not appear, however, that the inspector had power to take samples of food.—The Chairman asked if anything was gained by employing an inspector who was not an analyst.—The Clerk said the analyses would be made by the County analyst without cost to this Board if the samples were taken by the inspector.—Mr. Robinson remarked that these inspections would keep the contractors up to the work.—The Chairman said it was the duty of the guardians to see that the goods supplied were in accordance with the terms of the contracts.—Mr. Betts asked if the proposed action would not cast a slur on the Board's officers. Mr. Moore enquired how often the milk was examined now.—The Master of the Edmonton house said it was examined every day, but was analysed only when considered necessary.

### DUST REMOVAL.

In the Queen's Bench Division, on May 15, before the Lord Chief Justice and Mr. Justice Wills, an appeal by the foreman scavenger of the Islington Vestry against a decision of Mr. Bros, the metropolitan police magistrate, who had dismissed a summons against Mr. Howland, of Caledonian-road, for wilfully obstructing the scavengers who came to remove the refuse from the house was heard. It appeared that the London Council, under the Public Health (London) Act of 1891, had made bye-laws as to the removal and



disposal of house refuse, and one of them was to the effect that the sanitary authority should cause to be removed, not less frequently than once in every week, the house refuse produced on all premises within their district. Mr. Howland objected, however, to the annoyance of having the men call once a week, and refused to admit, with the result that a summons was issued. The magistrate dismissed the summons on the ground that the mere refusal to permit house refuse to be removed was not an offence under the Public Health Act, and that the refusal of the respondent did not amount to a wilful obstruction of an officer of a sanitary authority or of a person employed in the execution of the Act.

Mr. Macmorran, Q.C., and Mr. Parkyn appeared for the appellant; while the respondent appeared in person.—The Court held that the magistrate was wrong, and remitted the case to him for the infliction of a penalty.

Mr. Macmorran did not ask for costs.

## CORRESPONDENCE.

*To the Editor of FOOD AND SANITATION.*

### LONDON WATER.

SIR,—Your correspondent "An Analyst" seems to have been at some trouble to ascertain that I am not associated with any chemical society, and, if he had prosecuted his researches further, might have learnt from the "Post Office Directory" that I am not a medical officer, a roller of pills, or a tooth-brush seller, but I have still to learn that it is impossible for a man doing any of these dreadful things to be as good a chemist as—shall we say—"An Analyst."

You will recollect, sir, no wish is expressed in my letter that it should be published. Still, as I am quite sure of the accuracy of the results, I could have no objection to their publication.

"An Analyst" (probably an unsuccessful one, judging from the tone of his letter) no doubt views with alarm the progress of education, and the consequent unveiling of such comparatively simple processes as the chemical examination of water for sanitary purposes.

It would be presumptuous, not to say ridiculous, for me to question the accuracy of Mr. Cassal's analysis, or the justice of his condemnation of the sample. Certainly, I had not the smallest intention of doing so.

My right to publish anything in FOOD AND SANITATION is bounded by "mine own sweet will" and your favour, sir.

I have taken in your paper nearly from its commencement, and have greatly appreciated the fearless way in which you expose the abominable trickery and adulteration practised in the preparation and sale of food, etc., and think you will agree with me that, if the analytical profession is discredited, it is due to the action of some of its members (as see your leading article of this week, and many others).

I may, sir, claim the credit of attaching my name and address, and may ask, probably in vain, "Who is 'An Analyst'?"

Yours faithfully,

RICHARD HORTON.

## THE FOOD AND DRUGS ACTS: ITS PITFALLS AND STUMBLING-BLOCKS.

By MR. H. MANSFIELD ROBINSON, LL.D.

SINCE food universally sustains life and health on this planet, the adulteration of it is a universal wrong, and should be punished by laws which should be clear and easily understood of the people, simple in their administration, swift and certain in their operation against the really guilty parties.

In point of fact, the laws of England for punishing the adulteration of food, are doubtful and loosely drawn in their phraseology, cumbersome and highly technical in their administration, absurdly tender towards the really guilty malefactor, who can adulterate with wholesale impunity, cruelly severe towards the ignorant small retail dealer who may be really innocent of any guilty intent; and in every line of every section abounding with so many legal and scientific pitfalls and stumbling blocks that even the trained expert, be he lawyer, analyst or inspector who administers them, is often puzzled to distraction, and his best efforts towards the public good are easily thwarted by the hair splitting subtlety of lawyers whose ingenuity and craft are stimulated and sharpened by the aid of the ill-

gotten gains which are sufficient to enable all the participants therein to flourish like green bay trees. But if the law of adulteration is bad, the culpable laxity of the magistrates who fail to enforce it is worse. Justices will lock a man up for a month for stealing two pennyworth of turnips and let the practised thief who systematically obtains twenty pounds a week by the false pretences of selling water for milk escape with a fine of 2s. 6d. or even 1d., when the latter may have seriously endangered many infant lives into the bargain (for about two million infants in this country subsist almost entirely on milk), or he may have been fined already £300, like a notorious London milkman, who nevertheless thrived upon the balance of his nefarious profits. One can appreciate the frankness of a Nottingham squire who gaily dismissed a summons for adulterating milk with 30 per cent. added water, with the remark that "farmers must live somehow"; but it is not so easy to tolerate the vagaries of one or two Metropolitan police magistrates whose proclivities for upsetting and finding flaws in the prosecutions of sanitary authorities, and raising defences not dreamt of by the defendant or his solicitor are so pronounced and ill-concealed as to be notorious.

No wonder, then, that on the lowest calculation  $1\frac{1}{2}$  million pounds sterling are obtained with practical impunity from the English people by the false pretences of food adulterators, and that infant mortality and sickness is so excessively high.

The extent of adulteration in London is shown by the last Local Government Board Report for 1894-95, where it is stated that over one-fifth of the samples of milk taken in London proved to be adulterated. In touching upon some of the pitfalls and stumbling-blocks under the Adulteration Acts, I assume this audience is familiar with those established by decisions in the Courts up to a year ago, for there is plenty of material in the decisions upon the Acts during the past year, for a night's discussion.

ANALYSIS.—It is very annoying for an Inspector to lose prosecutions through faults in analyst's certificates. The Inspector whose reputation and authority really suffer should, therefore, know a valid certificate when he sees one. The certificate must (1st) give the result of the analysis under Sec. 13 of the 1875 Act. (2nd) Be in the form specified in the schedule to the Act of 1875, in which occur the words, "I am of opinion that the sample contained the parts as under or the percentage of foreign ingredients as under," and in cases of perishable articles he is to specify if any change has taken place in the constitution of the article that would interfere with the analysis. A certificate omitting the latter statement was held invalid in *Peart v. Barstow* (1). It must also state from whom the article was received (*Harris v. Williams*, 2).

As to the two chief statements: 1st—The parts contained by the sample, or 2nd—The percentage of foreign ingredients, it has been held that in a case of abstracting cream from milk it is not necessary to set out the parts of the article but only the deficiency of fat that is the result of the analysis, and that the parts need only be set out in cases of adulteration (*Bakewell v. Davis*, 3). But in adulteration cases the constituent parts of the article and the foreign ingredients should be set out. Thus an analyst's certificate as to rum, that it contained an excess of water at 13 per cent. of the entire sample over and above what was allowed by Act of Parliament, was held bad in *Newby v. Sims* (4). Mr. Justice Lawrence remarks that the certificate should contain evidence, and not only the conclusion at which the analyst has arrived. In the recent case of *Fortune v. Hanson* (5) an analyst's certificate as to milk that stated the percentage of foreign ingredients to be 5 per cent. of added water to the prejudice of the purchaser, without giving the constituent parts of the sample, was held bad, and seeing the different standards of milk adopted by public analysts and Somerset House officials, there is good reason for requiring figures and data showing the standard adopted, on which the justices can act for themselves. Mr. Justice Kennedy said "the analyst must state the grounds on which the analyst has come to his decision."

Mr. Justice Hawkins said "water is naturally present in milk; if the added ingredient had been something which ought not and does not naturally appear in milk, the certificate would be sufficient." In *Hewitt v. Taylor* (6) it was held that an analyst's certificate that milk containing 6 per cent. added water was only sufficient evidence of the fact and was not conclusive, and in the face of evidence that the poorness of the milk was due to the cow calving, the prosecution was held to have been rightly dismissed. But without any such evidence the analyst's certificate ought to be acted upon (*Harrison v. Richards*, 7).

(To be continued.)



# YORKSHIRE RELISH.

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---

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**v.**

**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

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**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

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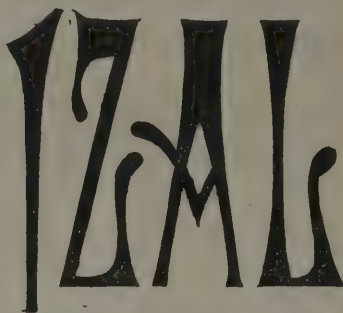
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## Food and Sanitation.

SATURDAY, MAY 30TH, 1896.

### JOBBERY AND CORRUPTION IN THE ARMY STORES DEPARTMENT.

A SPECIAL COMMISSIONER who recently went down to meet the "Clive," on behalf of *Truth*, has done real good service by fearlessly printing the exact state of affairs as he found them. This boat brought over 739 individuals—soldiers, women, and children, of whom 263 were invalids. For the latter there was hospital

accommodation capable of providing for sixteen patients only. "This place had every disqualification it is possible to conceive," says the writer. "The patients were packed in tiers one above the other. Even the very liberal use of disinfectants did not conceal the foul air." A number of women and children were berthed below. The writer went down a hatchway, and this is what he found: "A compartment measuring some fifteen paces by twelve; it was lighted by port-holes. Ventilation when the ship is in motion is impossible, owing to the fact that these port-holes are usually under water. This place was so filled with berths from floor to ceiling that there was scarcely any room to walk between them. In this space some forty women and seventy children were berthed." What existence in a hole like this, under a hot Indian sun, can have been, it is well nigh impossible to conjecture. In the Red Sea the temperature, even under the most favoured conditions to first-class passengers, is well-nigh unbearable. Down in a hole like this, with so many human beings poisoning the air, it must have been absolute torture, and the only marvel is that any of the sufferers survived.

The description of the sanitary arrangements, which are never too good on board ship, is simply revolting. The latrine, it seems, was a sort of communal arrangement, and was blocked up, the stench being so horrible that the commissioner was nearly sick with his visit. A row of tin basins comprised the whole of the lavatory arrangements, and these had to serve for those who were ill and those who were not. When it is added that many of the invalids were suffering from a loathsome contagious disease it will be seen that the arrangement was not only cruel, but dangerous to a degree. There was no provision whatever against infectious disease, and had anything like fever or cholera broken out it would probably have gone through the ship. The provisions were so unsatisfactory that the men had to crack the biscuits up with a hammer. A man with a broken jaw is said to have received one of these for his breakfast.

This matter of the provisions seems to be a most serious one, and some trouble ought certainly to be taken to find out who is responsible for putting such rubbish on board and how much was paid for it. The diary of a sergeant kept during the voyage forms most extraordinary reading. From this I learn that when the ship was three days out 100 tins of beef condemned by the medical officer were pitched overboard, together with a number of tins of condensed milk gone rotten. At another point the bread was condemned by the doctor and pitched overboard. One man said it would make shot for the guns. In the Red Sea the rice was condemned, as it was full of maggots, and a lot more beef went by the board in the Mediterranean. The keeper of the diary says that he saw women crying they could get no wholesome food for their starving children. As only one man was put on to cook for the whole of the men and women at the beginning of the voyage, the potatoes were served up at mid-day and the meat at tea-time. There is one pretty frequent remark, however, in the diary which is worthy of note. The writer says: "I generally saw plenty of good fish going into the officers' quarters."

People often wonder, says *Reynolds' Newspaper*, why service in our army is not popular? Can it be a matter for question when the poor fellows who have done their duties under the burning suns of India are treated in this way? There is room here for searching inquiry. I do not know where the fault lies. It is not for want of money. The money for the army is voted by millions every year, and though we know that hundreds of thousands of it are spent in paying the pensions and salaries of costly and ornamental officials, it is no part of the programme that our soldiers should be starved and treated with less consideration than beasts of the field. The taxpayer does not pay his money with any idea that he is putting his hand in his



pockets to purchase maggoty rice, putrid beef, and rotten bread. Somebody has to buy these stores and someone has to pass them.—Who is it?

### THE TOUS-LES-MOIS ARROWROOT QUESTION.

At Ashford on May 19, Mr. Walter Ballard, grocer, Shadoxhurst, was summoned, under the sale of Food and Drugs Act, on the charge of selling arrowroot not of the nature, substance, and quality demanded. Mr. A. H. Neve, solicitor, Tonbridge, defended on behalf of the wholesale dealers (Messrs. Arkell, of Maidstone). Police-constable Potter said he visited the defendant's shop at Shadoxhurst on April 20, and asked to be served with a quarter of a pound of arrowroot, for which he paid 3d. At the same time he told Mr. Ballard that he required it to be analysed by the public analyst. He asked for a quarter-pound of arrowroot, not naming any particular kind. Police-superintendent Wenham produced the certificate of Mr. Adams, the public analyst, who said that the sample in question was "tous-les-mois" starch. It was an article derived from a plant belonging to the same order as that which yielded true arrowroot. He added, "There is no objection to its being sold under its proper name, but it should not be sold as arrowroot." Mr. Neve observed that the sample consisted of starch, and he asked the superintendent whether arrowroot was not starch. He replied that true arrowroot was obtained from a root known as *Maranta arundinacea*. His knowledge was obtained from the dictionary. For the defence, Mr. Neve said that, looking at the case from all aspects, both legally and morally, there seemed to be no adulteration. He understood that the public analyst had no objection to the sale of "tous-les-mois" so long as it was sold under a certain name. He should like to draw the attention of the Bench to the fact that there was no profit to the seller in substituting "tous-les-mois." He should call evidence to prove that the article sold at 1s. per lb. was full value for the money, and that it was a harmless ingredient, therefore the purchaser was not prejudiced. There was no scientific definition of arrowroot whatever. He had searched the records of the superior courts, and could not find anything of the kind. The Colonial Office were taking active steps in promoting the import of "tous-les-mois" from Queensland, and he could not find any case whatever in the Queen's Bench which decided whether that product should or should not be sold as arrowroot. This sample in question was actually purchased by Mr. Ballard from Messrs. Arkell as arrowroot, and Messrs. Arkell had it from the importers as St. Vincent arrowroot. It was, he contended, arrowroot to all intents and purposes. He trusted the Bench would not take upon themselves the responsibility of deciding whether "tous-les-mois" was to be considered arrowroot when experts differed. In this case there was no fraudulent intention, and therefore the Bench could not convict. Mr. Neve was about to quote a case on the latter point, when the Bench intimated that as there was no fraudulent intention the case would be dismissed.

### CELERY OIL.

GERMANY is endeavouring to foster a new industry in celery oil. Distillers of essential oils have experimented with the distilling of celery during the past season, producing a few pounds. It is distilled from the green leaves, possesses the powerful aromatic odour and taste of the plant, and may arouse considerable interest among manufacturers of concentrated soups and preserved meats and vegetables. It requires a hundred pounds of green leaves to make one pound of oil. If it proves feasible to distil celery for flavouring purposes, other herbs will be utilised in the same manner for like purposes.

### THE SANITARY CONDITION OF NATIVE WATERING PLACES.

ACCORDING to Dr. J. W. Moore, the president of the Dublin Sanitary Association, there is a danger that some of the seaside summer resorts in the neighbourhood of Dublin may become "the most unhealthy in the world." This is not to be wondered at when the condition, as described by Dr. Moore, is considered:—"Without public lighting, paving, sewerage, or (in some cases, at all events) water-supply, with little or no sanitary inspection or supervision, they grow year by year in size, but also in unwholesomeness. Scarcely have the unfortunate summer visitors arrived when sore throats become prevalent, or summer diarrhoea, or even typhoid fever and sewer-gas pneumonia. A fore-shore in places reeking with filth, foul and overflowing cesspools, roads deep in mud and water in wet weather, but along which sweep tornadoes of dust in dry weather, and which are steeped in Cimmerian darkness in the long nights of autumn; a precarious water-supply which is not above suspicion of contamination with the germs of death-dealing diseases—such is the state of things which may be met with at some at least of our most popular seaside resorts. It is an evil which cries for immediate redress and a stringent measure of reform."

But despite this terrible picture, which we take leave to say is exaggerated, the Irish watering-places are healthier by far than the consumption conservatories such as Mentone for instance, where English royalty and aristocracy have set the fashion of squandering English money to benefit foreigners. If Her Majesty and H.R.H. the Prince of Wales would give English, Irish, Scotch and Welsh watering-places a chance, those places might have a strong enough attack of prosperity to go in for improved drainage schemes, etc., but snobbery and anti-Englishism leave our native health resorts neglected, and we suppose such will be the case until we, as a nation, have the sense to insist upon our royal personages doing something to benefit native places like Southport, Blackpool, Bridlington, Hastings, Ramsgate, etc., and our many excellent mineral springs. English, Irish, Scotch and Welsh health and pleasure places have had no worse enemies than English royalty, and it is about time this should be plainly stated.

### IS BEESWAX A DRUG?

IN a report to the Kent County Council, the public analyst (Dr. M. A. Adams) states that during the past year he analysed 365 samples of food and drugs. In samples of food the rate of adulteration had been unusually low, but in drugs the amount of adulteration had again been very high. Out of nine samples of beeswax three were found to be adulterated; in one of these three cases only 15 per cent. was wax, the other 85 parts being paraffin and resin. Convictions for the adulteration of beeswax had been obtained in several divisions of the county, but in the Cranbrook division a prosecution failed in consequence of the justices holding that beeswax was not a drug within the meaning of the Act. A case had been stated, and the opinion of the Queen's Bench Division would be taken on the point, which, in the opinion of the county analyst, is one of some importance.

### AN ANCIENT DISEASED MEAT VENDOR.

IN Aberdeen, on May 20, Baillies Edwards and Murray presiding, Georgina Rennie, flesher, Littlejohn-street, was charged with having had in her possession, on 9th inst., at premises occupied by her in the New Market Buildings, a carcase of a calf which was being exposed for sale, and which was totally unfit for human food. Accused, who is over 80 years of age, and has



appeared before the court on several occasions for a similar offence, said that she would like the case adjourned for a fortnight in order to get witnesses on her behalf. She would not say whether she was guilty or not. Evidence for the prosecution was led. Dr. Matthew Hay, Mr. Kenneth Cameron, and another officer vindicated the charge that the meat was unfit for human food. Mrs. Abel, who sold Rennie the calf, said that she had purchased it for about 33s. and disposed of it to the accused for 3s. because it was not what it should be. Baillie Edwards said that he was sorry to see before him on such a serious charge a woman of accused's age. She had been found guilty of selling food which was little short of poison. He could not do less than sentence her to pay a fine of £10, with 27s. expenses; failing payment within a fortnight, she must go to prison for one month.

#### POISONOUS CHEAP CAKES.

LESS than three months ago 11 children were poisoned by eating cake at Silvertown. The prompt action of the medical man who was called in at the time saved all the lives with the exception of one. The cake was said to have been purchased at a local shop, but this was not proved at the inquest. Great excitement has now been again created in the neighbourhood this week owing to the deaths of two children named Cocklin, aged respectively seven and three, whose parents reside at 62, Martindale-road, Custom House, who have both died, it is alleged, from the effects of eating poisonous cake. The past three years has seen an enormous development of the cheap cake trade, and it is feared that much very questionable material is used in the manufacture of cakes.

#### THE COST OF THE COPPERED PEAS CASE.

AT the meeting of the Federation of Grocers' Associations the Secretary said it was impossible to take the case any further. The appeal made was upon a question of fact, and not upon a question of law. Had there been a question of law involved they might have gone further. The only comfort they had got out of the case was that they had got a decision which had never been given before. In all cases decided up to the present there had never been a definite pronouncement as to the general non-injurious nature of peas containing copper. In the Bristol case the decision was that that particular bottle had not been proved to be injurious. In the Glasgow case the decision was almost similar. But in the appeal case they had got a judgment distinctly laying down that peas containing something under three grains of sulphate of copper were not injurious. He expected that the case would cost £700. Steps were being taken to prevent what would follow—namely, a wholesale prosecution.

#### STREET ICE CREAMS.

MR. F. DURANT, in his report as Chairman of the St. Pancras Public Health Committee, issued on May 21st, states that upon analysis of three samples of the water in which ice-cream glasses were washed it was found that they contained respectively, 4,200,000, 2,150,000 and 5,340,000 putrefaction bacteria per cubic centimetre, as against rarely more than 100 bacteria in a cubic centimetre of good drinking water. Hence not only were the cheap ice creams vended in the streets, and mostly consumed by juveniles, frequently unwholesome because of the objectionable materials of which they were composed, but the water used by the vendors in connection with their business was very often foul. The St. Pancras Health Committee, having fully investigated the facts

of the case over a wide area, hold that the present state of affairs "undoubtedly constitutes a source of danger to the health of the children of the poorer classes," by whom the objectionable ice creams are mainly consumed. The Committee consider it is clearly necessary to control street sellers of ice cream in their occupation, and they have requested the Local Government Board to promote legislation providing for the registration of these ice cream vendors, and for the regulation of the trade by bye-laws, and proper supervision of the manufacture and supply of ice creams. The Vestry of Clerkenwell and other London local authorities have made similar representations.

#### TINNED MEAT POISONING.

IN a provincial town recently 156 persons were poisoned through partaking of tinned meats, which were found all to emanate from one wholesale house. The report does not state that any action has been taken against this firm, but surely it is a case for investigation. The revelations at a tinned meat factory in East London a short time ago were enough to turn the stomach of the most inveterate flesh consumer. No one, in fact, knows "what lies beyond" those brightly-coloured labels which decorate provincial grocers' windows. So says the *Vegetarian* in its last issue.

At the time the paragraph was being printed, Arthur Thomas Vernon, potted meat manufacturer, Gibbs-street, Whitmore Reans, was charged at the Wolverhampton Police Court with having upon his premises meat which was unfit for human food.—Mr. W. L. Brown (from the Town Clerk's office) prosecuted.—Mr. S. Blanton, inspector of nuisances, stated that on April 14 he visited defendant's premises, and found two workmen engaged in cutting up meat into small pieces. He examined the meat, and found it was wet, sticky, and putrid, and that it emitted an offensive odour. The meat was seized, and condemned by the medical officer of health.—Dr. Malet said the meat was decomposed and green. Its condition was so bad that he did not think anyone would have been fool enough to buy it.—Mr. T. Dallow, who defended, said the meat was sound when purchased, but it had been overlooked, and the defendant was not aware that it was being prepared for pickling. The meat would not have been sent out.—A fine of £10 and the costs was inflicted.

#### KESTEVEN COUNTY COUNCIL STILL BURKES THE ADULTERATION ACTS.

AT the quarterly meeting of the Kesteven County Council, Mr. Charles E. Cassal, F.I.C., reported that during the quarter 22 samples had been submitted to him for analysis, of which 20 were genuine, one adulterated, and one inferior. Proceedings were taken in the case of adulteration, and the vendor was fined 10s., including costs.

Such a miserable number of samples taken for analysis only encourages fraud.

#### MEAT AND DAIRY INSPECTION IN SCOTLAND.

THE safe-guarding of the interests of the veterinary profession in the matter of meat and dairy inspection was the subject of consideration at a meeting of veterinary surgeons held in Edinburgh on May 20. Mr. Finlay Dun, who presided, pointed out that the Public Health (Scotland) Bill now before Parliament delegated to medical and sanitary officers duties for which veterinarians were more fully qualified, and a resolution was approved affirming that a qualified veterinary inspector or surgeon should in all circumstances be the person authorised by the Act to determine the health of domestic animals.



### THE WILTS COUNTY COUNCIL AND ANALYSTS' DIFFERENCES.

At the last meeting of the Wilts County Council, Sir Charles Hobhouse asked what had become of certain prosecutions instituted by the inspectors under the Food and Drugs Act, for alleged adulteration, the result in two instances being marked "none."

Mr. Storey Maskelyne replied that different magistrates took different views of the law. With regard to the margarine and butter question, there was a difficulty in getting a case clearly brought before the different magisterial benches unless they had something like professional representation. Their own General Purposes Committee actually passed a rule that they were not to prosecute in cases where butter was adulterated to the extent of 25 per cent. Well, that was afterwards rescinded, but it was an instance showing how very little people realised the nature of the cases that came before the court on different occasions.

Mr. Witty said he did not think it had been explained why a case of selling margarine as butter was withdrawn. He would tell them: A sample was analysed by the county analyst, and he reported that it was adulterated. The retailer, through the wholesale firm who supplied him, was dissatisfied with the report, and sent a second sample to the analyst of an adjoining county, who reported that it was genuine. The third sample was sent to Somerset House, and again reported genuine, and it was then thought that the best thing for the county to do was to retire from the prosecution with the best possible grace, which they did.

Mr. Jeans asked whether it would not be better, before proceeding with future prosecutions, to call in an additional analyst.

### MILK.

At Hemel Hempstead, Geo. Payne, of Boxmoor, was charged with selling adulterated milk.

Mr. Rushworth, Inspector of Weights and Measures, said he asked for a pint of new milk, and he was served. He paid 2d. for it. He then told the lad that he had bought it for the purpose of analysing. He sent part of the milk to the public analyst, Mr. A. E. Ekins, St. Albans, and he had received from him a certificate showing that the milk was deficient to the extent of 20 per cent. in fat.

Mr. Payne admitted that the milk was as stated by the Inspector, but it was done in no way to defraud the public. At the time when his son was selling milk, which, he reminded the Bench, was skim milk, and consequently cheaper, he himself was further up the road serving his customers with fresh milk. When the inspector gave his boy the twopence he ought to have had a halfpenny change, but doubtless the boy was frightened and forgot to give it to him. He had had to do with selling milk all his life, and never had a complaint against him before. His son was 13 years of age and had only just left school. Fined £1 10s. including costs.

At Grimsby, on May 21, Edward Jewitt, dairyman, Corporation-road, was summoned by the sanitary authority for selling adulterated milk on the 28th ult.—Mr. J. C. Wright, being a member of the Prosecuting Committee of the Town Council, did not adjudicate in this case.—Mr. Bloomer appeared for the defendant, and pleaded guilty to a technical offence. The simple fact was that the milk had been bought from another man without a written warrant. If they had had a written warrant the case could not have been brought.—Sanitary Inspector H. F. Moody stated that on the day of the charge he had bought a sample of new milk from Jewitt for public analysis. The milk was analysed and found to contain 13½ per cent. of water. Defendant had stated that he had bought the milk from another man, having lost a cow. On being asked for the name of the man who sold him the milk, defendant said "That is no business of yours." Witness afterwards discovered, however, from whom the milk was bought, and took a sample of that man's milk, but found it genuine.—On the representation of Mr. Bloomer, the magistrates concluded that there might have been some slight want of knowledge on the part of the defendant and therefore fined him 16s. including costs.

JOSEPH CUDDEFORD, of Barne Barton, St. Budeaux, was

summoned at Devonport Police Court on May 22 on a charge of having supplied milk to the Devonport Workhouse not of the nature, substance, and quality demanded by the Guardians. Mr. J. P. Goldsmith appeared for the prosecution, and Mr. P. T. Pearce for the defendant. Mr. G. T. Gaeton, inspector under the Food and Drugs Act, said that he called at the Workhouse and asked the defendant's boy for a sample of raw milk. On sending it to the public analyst it was found to contain 37 per cent. of added water. Mr. J. A. Pearce, deputy clerk to the Guardians, showed the contract with the defendant, who agreed to supply skim milk at 3½d. per gallon, and new milk at 8½d. per gallon. Mr. C. Whenmoth said that the samples given to the inspector was taken from the can which was supposed to hold new milk. Other evidence was given, after which the Bench decided to fine the defendant £5 and costs.

At Clerkenwell, Daniel Lloyd, of 3, St. John's-lane, Clerkenwell, was summoned for selling a pint of milk, which was found, when analysed, to be adulterated with 6 per cent. of added water. Defendant was also summoned for selling margarine in a wrapper not labelled margarine, and further for exposing margarine for sale without having the article ticketed as such. Mr. Ricketts, solicitor, appeared for the defence. Defendant was fined 30s., and 6s. costs.—Abel Vaughan, of 28, St. John's-road, was summoned for similar offences, and fined £5 and costs. A previous conviction was proved.

At Birmingham, on May 22, John Woodcock, milk-seller, Upper Highgate-street, and Mary Ann Commander, Leopold-street, were fined 60s. and costs, and 20s. and costs respectively, for having sold milk deficient in natural fat.—Fines of 40s. and costs were imposed on Frank Newton, provision dealer, Monument-road, and Henry Hayes, Great Tindal-street, for having exposed unlabelled margarine for sale.

At Guildhall, London, on May 20, before Mr. Alderman Alliston, Mr. Richard Evans, chairman of the Board of Guardians for the City, appeared to an adjourned summons, under the Food and Drugs Act, for selling milk that was adulterated. Mr. Vickery prosecuted on behalf of the Commissioners of Sewers, and Mr. Walter Beard represented the defendant. Considerable interest was taken in the case, and several guardians and inhabitants of Bishopsgate were present. Mr. Vickery put in the certificate of Dr. W. Sedgwick Saunders, the analyst for the City, which stated that the sample contained 88 per cent. of milk and 12 per cent. of added water. Inspector May deposed to calling at 28, Widegate-street, and buying the milk. Dr. W. Sedgwick Saunders stated that the sample of milk was analysed by him, and the certificate put in was correct. Mr. Beard: Is it not difficult to detect adulteration in milk? Dr. Saunders: No, not in the least—that is if the milk is fresh. Mr. Beard: When you say 12 per cent. added water, you do not mean to say that water was added to the milk? Dr. Saunders: Yes, I do; I mean water added for fraudulent purposes. Mr. Beard: Added water does not necessarily mean water added? Dr. Saunders: Not necessarily. Re-examined by Mr. Vickery: In this case the 12 per cent. added water meant that water had been added. Mr. Beard said he could not in any way controvert the certificate, because the defendant did not communicate with him as soon as the milk was taken to Dr. Saunders. After the hearing last week he sent a sample to an eminent analyst, but it was too late—the milk was too far gone for him to be able to form an opinion. But he (Mr. Beard) contended that added water did not necessarily mean water added. The defendant—who was a well-known citizen—would go into the box and say that he sold the milk just as he received it. With regard to the milk in question, witness received it himself at five in the morning; it was under his observation all the time; he served the inspector, and he would swear he sold it just as he received it. He knew that milk differed in quality. He at one time kept cows, and could say that some gave milk like cream, while in some instances it was more like water. Mr. Vickery: You have had milk from Marriage and Impey for 25 years? Yes. Mr. Vickery: And you did not think it well to get a warranty in spite of what occurred on April 8th, 1891? Defendant: No; I know to what you refer. I was fined at this court on that date £5, but under different circumstances. I was not at my place of business then, but of course was held responsible for the acts of my servants. But so far as the warranty is concerned I did not know of such a thing until recently. A previous conviction of £5 and 6s. 6d. costs having been put in, the Alderman said the case had been proved. The defendant did not obtain the warranty, and he should fine him £15, and costs.



## THE DISPUTED ANALYSIS GAME.

SEVERAL cases involving points of considerable interest under the Food and Drugs Act were heard before Mr. Headlam at Manchester on May 20. In the first case three persons were concerned. An inspector attached to the Sanitary Department of the Town Hall took a sample of the milk sold by Francis Henry Winkup, a small shopkeeper in Gardner-street, West Gorton, and on analysis it was found that the milk had been deprived of fat to the extent of 27 per cent. Winkup, however, declared he sold the milk exactly as he received it from a wholesale milk dealer named Alfred Houchin, of Hyde-road, Gorton. A sample of the latter's milk was taken, and was found to have also been deprived of fat to the extent of 26 per cent. Houchin, in turn, declared that he had sold the milk as he received it from George Hazlehurst, of Blue Slate Farm, Twemlow. Accordingly, on different occasions samples were taken of Hazlehurst's milk as it was delivered at Longsight station. Subsequently two inspectors went to Hazlehurst's farm and asked for a sample of milk as it came from the cows, but Hazlehurst would not allow them to have the milk until after it had passed through the refrigerator. The samples of the milk that had been taken at Longsight station had, according to the analysis of Mr. C. Estcourt, the city analyst, been deprived of fat to the extent of from 16 to 45 per cent.

The analysis of Mr. Charles Blades, a member of the Society of Public Analysts, who had also examined the same samples, produced very different results. Under these circumstances, it was agreed that the summonses against the defendants should be adjourned for a fortnight, to allow of Mr. Estcourt and Mr. Blades making a joint analysis of the samples.—Mr. G. Rook prosecuted; Mr. Gilmore appeared for Houchin, and Mr. Fletcher for Hazlehurst.—The second case was of a similar character, and the wholesale and retail dealers both declared that they had sold the milk, which had been deprived of fat to a considerable extent, as it had been delivered to them. Accordingly, a sample was taken of the milk as it was supplied by Joseph Taylor, of Whiteley Green Farm, Adlington, Cheshire, and it was found that fat had been abstracted to the extent of 32 per cent.—Mr. Brown, who represented Taylor, contended that the milk dealers had combined to throw all the blame upon the farmers, and he also complained that the inspectors attached to the Sanitary Department of the Town Hall took advantage of "the poor unsophisticated Cheshire farmers."—Mr. Headlam fined Taylor £5 and costs. The summonses against the wholesale and retail dealers were withdrawn.—Joseph Samuel Shaw, of Egerton-street, Moss Side, was fined £2 and costs for selling milk containing 5 per cent. of added water; and for a similar offence Mathew Wild, of Lowe-street, Miles Platting, was likewise fined £2 and costs.—For selling milk which contained 7½ per cent. of added water Alfred Lord, of Rochdale-road, Harpurhey, was fined 10s. and costs.

## PROTECTING THE PURITY OF BRADFORD MILK.

At the Bradford Borough Court proceedings were taken by the Bradford Corporation against two farmers named Benjamin and Joseph Boothman, residing at Cross Hills, upon various charges of infringement of the Dairies Act in Bradford. Mr. F. Stevens, of the Town Clerk's department, conducted the prosecution, and the charges were sustained by the evidence of Inspector Rhodes and other witnesses. The first information laid against the defendants was for sending milk to Bradford in cans which were in an unclean condition.—Inspector Rhodes stated that on the 1st inst. he inspected the defendants' milk cans at the Midland Station, and found them coated with congealed milk, and in a dirty state.—The defendants admitted the offence, and were ordered to pay the costs.—The second information referred to the same occasion, and was for selling to Michael Cumming, milk dealer, Bolton-road, milk which contained 3½ per cent. of added water, and from which 20 per cent. of the natural fat of the milk had been abstracted. Evidence was given to show that the milk was received from the defendants at Kildwick Station and conveyed to Bradford, where samples were taken by Inspector Rhodes, and analysed by Mr. Rimmington, the borough analyst.—The defendants stated that the milk was sent away just as it came from the cow, and had not been tampered with by them. They asked to be leniently dealt with, as farming did not pay. They paid £175 a year rent for 43 acres of land, and £30 in rates, and only got from 30 to 35 gallons of milk per day.—The defendants were fined 10s. each, with 20s. costs.—A third information was laid against the

defendants for selling to Mary Ellen Ryder, a Bradford milk-seller, milk from which 20 per cent. of the natural fat had been abstracted. They were ordered to pay the costs, 7s. each.

## VAGARIES OF IRISH MAGISTRATES.

At Listowel, on May 18, before the Hon. Mr. J. French, R.M., presiding, and Mr. G. M'Elligott, a number of important prosecutions under the Food and Drugs Act, which were adjourned on the last court day for the production of the analyst, the solicitors engaged for the defence successfully contending that the certificate of the public analyst could be received as evidence only on condition that it was not questioned by the defendants, in which case the Act of Parliament provided that the analyst should be produced in *propria persona* were called for hearing.—Mr. Charles Morphy, Crown Solicitor, appeared for Sergeant Galligan, the inspector under the Act; while Messrs. T. Creagh and J. Moran, solicitors, defended.—On the cases being called, it appeared that Sir Charles Cameron, on whose certificate, as being the public analyst of the county, the Crown relied, was not in attendance. Upon learning this, Mr. Moran muttered, *sotto voce* :—

"Oh, Cameron! oh, Cameron! beware of the day  
When Munster shall meet thee in battle array,"

which provoked much laughter amongst those by whom the lines were heard.—The first prosecution was against a farmer named Thomas Costelloe, residing at Afouley, for selling milk of which 18 per cent. of fat had been abstracted according to the statement appearing in the analyst's certificate.—Sergeant Galligan swore that he bought a pint of the milk which was being delivered at a creamery. He divided it and gave a portion of it to the person in charge of the milk, and retained two portions, one of which he sent to Sir Charles Cameron, the certificate of whom he now handed in.—Mr. Moran: I object to the certificate. Bring Sir Charles Cameron here if there is such a man (laughter). I believe he is a myth (renewed laughter). The certificate is not evidence when challenged. The case was adjourned for the production of the analyst on the last day; that was the order, if I don't make a mistake.—Mr. French: The order was "adjourned for a week."—Mr. Moran: Yes, for the production of the analyst. We objected at first to his certificate, and we still object.—Mr. Morphy: The certificate is *prima facie* evidence, and it must be accepted until it is rebutted. The Grand Jury finds a bill on *prima facie* evidence, and it finds it on the evidence of the prosecution, and it remains until contradicted. It is not our duty to bring down the analyst, and if the magistrates hold we should bring him down, the result will be that this statute will be totally inoperative. I hold you cannot refuse the certificate.—Mr. French: The certificate is evidence unless the defendants require the production of the analyst.—Mr. Morphy: Let him be produced.—Mr. Moran: Let you do this. On his evidence you are making your case. It never was the intention of the Act that the analyst should reside two hundred miles away. It was clearly the intention to appoint a man residing in the county.—Mr. M'Elligott: I am in favour of that.—Mr. Morphy: If the analyst were to be produced in every twopenny halfpenny case, what is the administration of the Act to come to?—Mr. M'Elligott: The public analyst should reside in the county.—Mr. Morphy: It is not contended that he is not competent or the analyst of the county.—Mr. Moran: His certificate would not be even *prima facie* evidence if he were not the public analyst.—Mr. Morphy said there was no obligation on them to produce the analyst, and he held that in holding that Sir Charles Cameron should be produced the magistrates were taking an incorrect view of the law. He did not produce the analyst.—Mr. French (interrogatively): And you won't? Mr. Morphy: I don't say that.—Mr. French: The cases were adjourned for Sir Charles Cameron. As he has not been produced, I give a dismissal without prejudice.—The next prosecution was against James Woulfe, a farmer living at Ballyween, for having 15 per cent. of fat abstracted from his milk.—Mr. Creagh, solicitor, appeared for the defendant.—From the evidence of the defendant's wife, it appeared that a quantity of cream for the "colouring" of some cups of tea was abstracted from the milk previous to being sent to the creamery. Mrs. Woulfe stated that she got permission from the wife of the owner of the creamery to take a small quantity of cream.—Considering the candid admission of the defendant's wife, a fine of only 10s. was imposed.—The next prosecution was against Mrs. Hanoria O'Connor, Ballydonoghue. The defendant, who is a licensed publican, was charged with selling whisky, which on analysis, was found to be 29·7 per cent. under proof,



25 per cent. under proof being the limit allowed by the Act.—Mr. Moran, solicitor, said the prosecution was now infusing some "spirit" into the proceedings (laughter).—Sergeant Galligan having given evidence as to purchasing three noggins of whisky from the defendant, which he divided in the manner prescribed by the Act of Parliament, Mr. Creagh formally objected to the certificate of the analyst being allowed as evidence. He raised the point as to the production of the analyst. The cases were adjourned for a certain purpose, and that seemed to be ignored. His client also got the whisky analysed.—Mr. French: I dismiss the case on the grounds that Sir Charles Cameron was not produced.—Mr. Morphy: I ask you, then, to state a case for the opinion of the judges of the Queen's Bench.—The application was granted on the grounds for which it was applied for, viz.: that the defendant objected to the reception of the certificate of the public analyst as evidence as prescribed by the 21st section of the Act of 1875, and contended that in the face of their demand that the Crown should produce the public analyst on whose certificate they relied for examination, the certificate was not admissible as evidence. The case so stated required the Court of the Queen's Bench to decide whether the contention of the defendant is or is not correct in point of law.—In the case of a prosecution against a farmer named Edward Enright, for having his milk adulterated to the extent of 18 per cent., Mr. Condon, solicitor, asked the case to be dismissed as the magistrates had decided in not inflicting a penalty where the percentage did not reach twenty.—Mr. French said that what Mr. Condon stated was correct, and he would accordingly dismiss the case. They had never fined in the Court where the percentage was under twenty.

At the time Sir Charles A. Cameron attends, the Lord Lieutenant might send a lunacy commissioner to examine into the fitness of magistrates who maltreat common sense and justice by encouraging 20 per cent. of adulteration.

#### SKIM-MILK CHEESE AND AN ANALYST'S CERTIFICATE.

In a case heard at the Ulverston Police-court, on May 14th, the Royal Lancashire Agricultural Society's special Inspector, who is acting in conjunction with the Lancashire County Council, preferred a charge of selling adulterated skim-milk cheese against a Broughton grocer. The cheese were not exposed for sale in the shop, but were kept in the warehouse. The Inspector asked for a pound of skim-milk cheese; he was told by the grocer that as they weighed but a few pounds each, and were sold at 4d. per lb., it was not the custom to cut them, but they were sold whole. He believed they were sold and known under another name, but could not at the moment remember what that name was. The Inspector was insistent, so the cheese was cut, divided into three parts, one kept by the seller, one by the Inspector, and the other sent to Dr. Campbell-Brown, the County Analyst, who certified that the cheese was made from skim-milk, but that it contained upwards of five per cent. of fat other than the fat of milk—animal fat, we presume. Mr. J. R. Butler, who appeared for the defence, raised the objection that the analyst had failed to give the other constituents of the cheese, as provided by the Act, and hence his certificate was bad in law. The Magistrates ruled that Mr. Butler's objection was fatal to the prosecution, and dismissed the case. This raises the question, how about the past analyses of the County Analyst—have they likewise been faulty, and yet have been acted upon? The strangest irony of the situation is that we are informed these "oleo" cheeses are manufactured in Scotland, and that the chief purchasers of them in this district are the farmers! Clearly they wish to be "saved from their friends"—the Inspectors.

#### UN SOUND MEAT AT EXETER.

At Exeter, on May 22, Thomas Rowe, pig dealer, of Coldridge, North Devon, was summoned for depositing the carcass of a pig at a shop in Market-street, Exeter, for sale as human food, on the 15th inst., such carcass being diseased.—Mr. G. R. Shorto, the Town Clerk, appeared to prosecute, and stated that the defendant, who is a country pig dealer, on Friday last sent the carcass of a pig to a shop in Market-street, Exeter, kept by Mrs. Hannabuss, for re-sale. As the flesh appeared red and spotted, she very properly refused to take it in from the man by whom it was delivered. Rowe himself arrived shortly afterwards, and, replying to his questions, Mrs. Hannabuss said she did not like the appearance of the pig, and would not have it. Rowe, how-

ever, said the pig was right enough, and added that he should take it into the market. He did so, hanging it there with the carcasses of other pigs intended for sale. It was seen there by John Bailey, foreman carpenter to the Exeter City Council, who called the defendant's attention to its condition, and also told him that he must not take it away. The defendant, notwithstanding, again removed the carcass to the shop of Mrs. Hannabuss, and obtained her permission to leave it in the passage of her house, stating that he should take it home and salt it for his own use. The pig was eventually seized by Mr. Wreford, sanitary inspector, and seen by Mr. Heath, veterinary surgeon, and Mr. Clapp, assistant medical officer of health, both of whom condemned it as unfit for food. Mr. Knapman eventually ordered its destruction, Mr. Clapp stating that its consumption would have entailed considerable risk to health.—Evidence bearing out this statement having been given by Mrs. Hannabuss, John Bailey, and Mr. W. J. Wreford, Mr. J. P. Heath, veterinary surgeon, said it was evident that the pig had suffered either from inflammation or fever, while on the interior lining of the abdomen there were signs of peritonitis.—Mr. G. T. Clapp corroborated. The flesh was decidedly unfit for food.—Defendant stated that the pig was sound when it was killed, and attributed its condition to the fact that sufficient time had not been allowed, prior to its removal, for the flesh to set.—Wm. R. Isaac, saddler and pig dealer, of Coldridge, of whom the pig was purchased, said it looked all right when killed. The defendant had paid him 5s. 9d. a stone for it. He and his family had eaten the liver before the defendant informed him that the carcass had been seized, and he had sold the entrails to a policeman.—Cross-examined by the Town Clerk: He sold a pig to the defendant, but he could not say whether it was the carcass of his pig that had been seized.—A fine of £5 and costs, £6 13s. 7d. inclusive, was imposed, or in default fourteen days' imprisonment.—Defendant: I must take the alternative.—While below, however, he reconsidered the matter, and later applied for time in which to pay the money, a fortnight being ultimately allowed.

At Kensington Petty Sessions, Frederick Gribler, 596, King's-road, Fulham, was summoned at the instance of the Fulham Vestry for selling tripe that was unsound and unfit for food.—Mr. Greig, sanitary inspector in the service of the vestry, represented that body, and said that the tripe was brought to him by a girl.—Rosina Capon, living in Harwood-road, who purchased the tripe, said her father sent it back, but the defendant refused to take it. He said she could have anything else in the shop in its place. She took the tripe back twice, and afterwards took it to Mr. Greig, the sanitary inspector.—Mr. Greig said he received the tripe from the last witness; when brought to him it was in a very bad and stinking condition. He took the tripe back to the defendant's shop and pointed out its condition.—Witness, in reply to Mr. Poland, said the defendant carried on the largest business of the kind in his (witness's) district.—The defendant said he was very sorry, but the magistrates would remember the hot weather they had recently had. He assured them that it should not occur again.—The Chairman said there was no doubt that tripe during the hot weather was an article likely to be affected, but it was clear that the defendant had not exercised due care in the matter, especially after the tripe had been twice brought back by the girl who made the purchase. He would be fined £10 and 5s. costs.—In a second summons for exposing unsound tripe, which was seized by Inspector Greig, and condemned by the Rev. J. S. Sinclair, J.P., who ordered a summons to issue, the bench inflicted a fine on the same defendant of 40s. and 5s. costs.

#### SWEET SPIRITS OF NITRE.

At the Shire Hall, Nottingham, on May 23rd, Thomas Gascoigne, grocer, of Bramcote, was summoned for selling imperfect sweet spirits of nitre, on the 21st April.—Colonel Story stated that he purchased from Mrs. Gascoigne three ounces of sweet spirits of nitre. She consented to that quantity being divided into three parts. One part was sent to an analyst, whose report certified that the sample was practically devoid of nitrous ether, which was the most important ingredient in sweet spirits of nitre.—In answer to Mr. J. Johnstone, who appeared for the defendant, the Colonel said the bottle from which he was served stood in the window.—Mr. Johnstone denied that there was any intention to defraud the public. He could, if necessary, produce evidence to show that Gascoigne paid the usual price for the nitre, and that it was of the required quality.



Of course if Gascoigne had been a chemist he would not have placed the nitre in a corked bottle nor put it in the window, where the rays of the sun could shine upon it.—Defendant was fined 10s. 6d.

### POISONOUS FISH.

POISONOUS fish are found in large numbers, and in many places, but more especially in the tropics. They are quite common in the Brazilian and West Indian waters, and also in the East Indian and Australian waters. Three kinds of fish, says *Our Animal Friends*, belonging to the mackerel family are poisonous. One is called the "jurel," and is found in the West Indies in large numbers. It can be distinguished from the common mackerel, which also abounds in the same waters, by certain peculiarities or marks. Thus, the "jurel" has no black spot on the gill-covers; it has scales on the neck, while the harmless kind has a black spot and no scales on the neck. The poisonous kind grows large, and often weighs as much as twenty pounds, but the others seldom run over two pounds. Mackerel weighing over two pounds are not allowed to be sold in the Havana markets. The "chicaro" is another kind of poisonous mackerel. It is also found in the West Indies, but the natives of those islands do not regard it as dangerous. The meat of the "chicaro" is not fit or safe to eat at certain times of the year, especially during the spawning season. Then it becomes highly poisonous, and the people of Guadeloupe sometimes use pieces of this fish which have been caught to poison rats. The "bonito" is a kind of mackerel that is most dangerous at certain times of the year. Usually it is a very pleasant and palatable bit of food, but every once in a while people are taken with colic after eating the "bonito." So it is best to let it alone. Two kinds of herring are known to be poisonous. The *meletta*, or tropical herring, is found all along the Atlantic coast as far north as New York. Within recent years there have been several cases in which people have died after eating this fish. The spawning season seems to be the time when the herring and other tropical fish should be let severely alone. The part which is considered most dangerous is the roe. The *meletta* which is found in East Indian and Australian waters is always poisonous, and it is the more dangerous because it is not easily distinguished from another kind of herring which is comparatively harmless. The poisonous kind has a black nose and a black spot on the dorsal fin, while the other has not these marks. The poisonous *meletta* resembles a herring, being five or six inches long, with silvery scales and a bluish-green back. . . . Some fish are poisonous in certain localities and harmless in other places. . . . some are poisonous at certain seasons of the year, and at other times wholesome. Let visitors to the tropics beware of fish eating!

### IS WOOD-PAVING INSANITARY?

The *Daily Telegraph* has opened fire on wood paving, saying: "There is a question of Metropolitan management—or mismanagement—which demands imperatively to be dealt with. The exceptional warmth and dryness of the present spring have antedated the annual revival of a cause of discomfort and not infrequently of disease from which Londoners have suffered for a good many years past, and which threatens to become more and more serious every year. We refer to the horrible smells emitted by our street pavements after even the shortest period of drought. No doubt we shall be told that this is merely one unpleasant result of a series of experiments which we cannot expect to bring to an end until the difficult paving problem is finally settled. Nor, indeed, whatever its value as a justification can the fact itself be disputed. The nuisance, at any rate in its present acute form, unquestionably dates from the introduction of the wood-block pavement. On all other merits and demerits of this material opinions may differ, but of its serious sanitary drawbacks there can be no possible doubt. It is at once porous enough to absorb all liquid or liquefying impurities of every kind without being, like some other absorbent substances, hard enough to retain them until they become harmless. These noxious matters simply soak through the surface, and impregnate the minute particles of wood which are continually being given off under the process of attrition. And as this process goes on more rapidly in dry weather, the air at such a season is laden with invisible but unfortunately respirable atoms, every one of which has been previously treated with a solution of manure, street refuse, and other abominations of every kind. They are offensive to the sense of smell, irritating to the eyesight, and generally injurious to the health; and it is monstrous to suggest that we are to go on inhaling them until we have arrived at a definite conclusion as to the ideal street

pavement for the Metropolis. If we have been misguided enough to pave our streets experimentally with a horribly insanitary material, the least we can do is to keep it punctually cleansed and disinfected as long as the experiment continues."

### THE FOOD AND DRUGS ACTS: ITS PITFALLS AND STUMBLING-BLOCKS.

By MR. H. MANSFIELD ROBINSON, LL.D.

(Continued from page 250.)

I have settled the following form of certificate for milk adulteration in view of recent cases:—

"I am of opinion that the said sample contained the parts as under:

|                  |   |   |   |   |
|------------------|---|---|---|---|
| Solids (not fat) | - | - | - | - |
| Fat              | - | - | - | - |
| Water            | - | - | - | - |

100'00

"And I am of opinion that the said sample contained the percentages of foreign ingredients as under:

Added water per cent.

"And I base this opinion upon the fact that the sample contained only per cent. of non-fatty solids, whereas normal milk contains at least 8·5 per cent. of non-fatty solids."

No official prosecution can be taken without a previous analysis. If you ask for bread and get a stone, or for a fish and get a serpent, the law is helpless without an analyst's certificate to that effect. For it is a condition precedent to all official prosecutions under the Acts, where the samples are taken with the intention of submitting them to analysis, that they should be analysed by the Public Analyst appointed for the district where the inspector acts (Pear v. Barstow (1), Smart v. Watts (8), Buckler v. Wilson (9)).

But in the recent case of Buckler v. Wilson (9), Lord Chief Justice Russell held it was not necessary where a private purchaser purchased margarine without the intention of submitting it to analysis for test purposes. In that case guardians of the poor had contracted "for good fresh butter, English"; and two days after, on finding it was margarine, they caused it to be divided in the usual way and submitted for analysis. Lord Chief Justice Russell pointed out that there was nothing in the Act to prevent the proof of an offence by other satisfactory evidence than an analyst's certificate; nor was it necessary that the purchaser should obtain the certificate of the public analyst, except where he purchases with the intention of submitting to analysis. He over-ruled the well-known case of Parsons v. Birmingham Dairy Company (10), which decided that Section 14 of the Act of 1875 applies to every purchaser, whether purchasing for analysis or not, and confirmed the opposite Irish decision of Guardians of Enniskillen v. Hilliard (11), which held that the formalities of notification and analysis need not to be gone through strictly by a private purchaser not purchasing for analysis. This decision applies equally to private purchasers under the Sale of Food and Drugs Act, and though all official purchases must be submitted to analysis, it is most useful for inspectors to be able to advise and assist private prosecutions where the fraud and adulteration is only discovered after the purchase has been completed a day or two, and so prevent the guilty vendor escaping where an official prosecution is impossible.

WARRANTIES.—There have been some very important cases on the vexed question of warranties which go clearly to show that they afford a wide loophole of escape for dishonest and clever adulterators.

Formerly the law was very stringent on what constituted a good warranty, and required the word "warranted" to appear therein, or as Baron Pollock said in Rook v. Hopley (12), "what is required by the statute is a writing expressed on the face of it that it is a warranty." But in Laidlaw v. Wilson (13) a dangerous extension was given to the word so that any contract which amounts in law to a warranty is now sufficient though the word warranty is not used. This view was confirmed in the recent case of Hawkins v. Williams (14) where an invoice describing butter as "guaranteed pure" was held a sufficient warranty. Inasmuch as the offence of giving a false warranty in writing constitutes practically the only means for a public official to get at the wholesale dealer, the decision in Cook v. White (15) in February of this year, is a very useful one. In that case a summons against a retail dealer had failed through production of a written warranty and a subsequent summons against the wholesale dealer was taken out and served on May 27th, more than 28 days from the original purchase of the article on April 28th. It was, nevertheless, held that the summons was in order



and that the time limit in Section 10 of the Act of 1879 did not apply where the article was not bought for test purposes from the person charged. How the difficulty of non-notification to the wholesale dealer and delivery of a sample to him, and analyst's certificate as to such sample was got over in that case, I am at a loss to understand, unless it was overlooked, for in the recent important case of *Reg. v. Smith and Kerr* (16), it was held that the analyst's certificate as to the sample taken from the retail dealer is not available against the wholesale dealer, and a host of other difficulties with which this kind of prosecution bristles were invented and dwelt upon by Mr. Justice Hawkins. In that case, a wholesale dealer gave a warranty in Oakham as to milk which he delivered to a retailer in Finchley, both outside the Clerkenwell Police Court district. The retailer sold and delivered the milk at the Great Northern Central Hospital, Holloway-road, Islington, where a sample was duly taken by an inspector in course of delivery, under section 3 of the Act of 1879. The analyst certified it to contain 14 per cent. of added water, and on a summons against the retailer being dismissed through the production of the warranty, a second summons was taken out against the wholesale dealer for giving a false warranty. The case coming on at the Clerkenwell Police-court, was dismissed on the ground that the magistrate there had no jurisdiction to hear it, neither the sale nor the warranty, nor the delivery to the retailer by the wholesale dealer having been made within the jurisdiction of that court. As no sample was taken in course of delivery to the retailer, it would seem that the wholesale dealer entirely escaped the provisions of the Food and Drugs Acts. Mr. Justice Hawkins pointed out, "that an analysis was a condition precedent to prosecution. This must be an analysis by the analyst of the place for which the Inspector acts. That an Inspector cannot insist on procuring a sample in a district for which he is not appointed. The Act provides for local Inspectors, obtaining from local Analysts' analyses of questionable food sold within their districts, and the prosecution of offenders by Justices having jurisdiction in the place where adulterated goods are actually delivered to the purchasers." This decision is a practical block to all false warranty prosecutions, and renders the Acts a dead letter as regards them. A prosecution I conducted prior to it shows clearly the difficulties even where the most abundant caution is used. On complaint of a retail dealer in Shoreditch, that in four months he had been swindled out of about £40 by a wholesale dealer (innocently calling himself a dairy farmer), in Wisbeach, and on the City Inspector declining to take a sample at Liverpool-street Station, the place of delivery of the milk to the retailer, the Shoreditch Inspector proceeded to Wisbeach and took a sample of the milk as the farmer handed it himself to the railway porter. He travelled with the milk, took another sample at Liverpool-street Station, in the City of London, and on arrival of the milk at the retailer's shop in Shoreditch he took another sample there. Part of the sample taken in the City was sent to the City Analyst, and part of it, with the sample taken in Shoreditch, was sent to the Shoreditch Analyst. Two summonses were taken out in Shoreditch for giving a false warranty and selling milk to the prejudice of the purchaser, and on the refusal of the City magistrates to issue a summons for prejudicial sale, on the ground that the Shoreditch Inspector had no jurisdiction in the City, a summons was taken out in the City for a false warranty. This case coming on first, and the defendant being represented by counsel, under the pressure of these different summonses he pleaded guilty, and was fined £10, and the Shoreditch summonses were withdrawn; but Mr. Ricketts, who watched the case for the retail dealer, said he would have given £50 to any hospital if he could not have got every summons dismissed; and in view of the above cases I agree with him. For, the place of delivery being the City, the Shoreditch magistrate had no jurisdiction under Sec. 20 of the Act of 1875, and the Shoreditch Inspector, having no jurisdiction to take a sample in the City, the City summons founded on the analysis thereof was accordingly invalid; indeed, I fail to see how the Shoreditch authorities could legally have got at the wholesale dealer; and to leave a layman to take samples, notify, and the like, is not a very hopeful course to adopt.

**MARGARINE.**—There have been several recent cases as to margarine which should be noted. *Buckler v. Wilson* (9) decided it is not a perishable article, so that the time limit as to serving summonses does not apply, and where the article is not purchased for test purposes, as by workhouse authorities, the proceedings of the Food and Drugs Act as to immediate notification, division of samples, and the like, do not apply. In *Reg. v. Titterton* (17), an appeal case taken by my Board against Her Majesty's Treasury, it was held (contrary to the practice established by the Home Secretary, and to the case of *Wray v. Ellis*, which was to the opposite effect) that penalties under the Margarine

Act were payable to the Sanitary Authority prosecuting. In *Moore v. Pearce's Dining Rooms, Limited* (18), the sale of margarine upon slices of bread to be consumed on the premises, and not taken away, when bread and butter was asked for, was held by Lord Chief Justice Russell not to be "an exposure for sale by retail." The sale of margarine with a wrapper round it marked "Margarine," the whole being enclosed in a brown paper wrapper not labelled at all, was held to be no offence in the case of *Toler v. Bischoff* (19). Since the case of *Reg. v. Titterton* (17) there is no reason why prosecutions for the sale of margarine as butter should not be taken under sec. 6 of the Sale of Food and Drugs Act, 1875, as a prejudicial sale. It would appear that a summons under this Act, and another under the Margarine Act, may be taken out for the sale of one article and a conviction obtained on each, one for not labelling the article margarine, and the other for a prejudicial sale (20).

**LABELS.**—In the case of *Collett v. Walker* (21), an Inspector asked for cheese, pointing to an article labelled "Valleyfield Finest Oleine Cheese." He did not see the words "Finest Oleine," which were in smaller type, and would not have known what they meant if he had seen them. It was held that the vendor was rightly convicted, as he had not called the Inspector's attention to the words until after the purchase was completed. But in the case of *Spiers and Pond, Ltd., v. Bennett* (22) where milk was sold with cream abstracted, contrary to sec. 9 of the Act of 1875, in a glass on which was written "Not guaranteed as new or pure milk or with all its cream. See Notices," and the notice stated that no such guarantee was given, though the milk was sold to them under a warranty of its purity and genuine quality, it was held by Lord Chief Justice Russell and Justice Wills that sufficient disclosure of the abstraction had been made, and the conviction by the Justices was quashed. In the *World's Tea Company v. Gardener* (23) it was held that an offer to sell margarine under any other name (such as "Kyllo's Creamery") is not an offence against the Margarine Act, 1887, and it is not necessary that the word margarine (if of the proper size) should be the only word on the wrapper, which need not be the outside wrapper. But if the word margarine is so placed as to be non-effective or misleading, as in a list of other words or in the middle of a sentence, so as not to appear as the designation of the article this would not satisfy the Act. *Fife v. McLaughlin* (24). An interesting prosecution for a false trade description, under the Merchandise Marks Act, 1887, may be seen in the case of *Bischoff v. Toler* (25) where margarine, sold with label as "French Factory Le Dansk," was really made at Southampton with oleomargarine imported from France, and it was held that the vendor was rightly convicted for using a false trade description as to the place where the substance was produced. I think I have now touched upon all the important decisions of the last twelve months. I hope this short *résumé* of them may be of some practical use to Inspectors in their work, and that legislation will shortly, upon the report of the Select Committee on Food Adulteration, remove some of the pitfalls and stumbling blocks in the Sale of Food and Drugs Acts, which have been so emphasised by recent cases.

1. *Peart v. Barstow* (1880), 44, J.P., 699, 763.
2. *Harris v. Williams* (1890), 6, T.L.R., 47.
3. *Bakewell v. Davis* (1894), 1, Q.B., 296; 10, T.L.R., 40; 69, L.T., 832.
4. *Newby v. Sims* (1894), 58, J.P., 263.
5. *Fortune v. Hanson* (1896), 60, J.P., 88.
6. *Hewitt v. Taylor* (1896), 60, J.P., 116.
7. *Harrison v. Richards* (1881), 45, J.P., 552.
8. *Smart v. Watts* (1894), 59, J.P., 54; 1, Q.B., 219.
9. *Buckler v. Wilson* (1895), 60, J.P., 118.
10. *Parsons v. Bham Dairy Company* (1882), 46, J.P., 727.
11. *Enniskillen Guardians v. Hilliard*, 14, Ir. L. Rep., Ex. Div. 214.
12. *Rook v. Hopley* (1878), 42, J.P., 551.
13. *Laidlaw v. Wilson* (1894), 58, J.P., 58.
14. *Hawkins v. Williams* (1895), 59, J.P., 325.
15. *Cook v. White* (1896), 60, J.P., 116.
16. *Reg. v. Smith & Kerr* (1896), 60, J.P., 225.
17. *Reg. v. Titterton ex parte Quelch* (1895), 59, J.P., 327.
18. *Moore v. Pearce's Dining &c., Rooms, Ltd.* (1895), 59, J.P., 692.
19. *Toler v. Bischoff* (1895), 59, J.P., 693.
20. See opinion of Editor of "Justice of the Peace" 59, J.P., 413.
21. *Collett v. Walker* (1895), 59, J.P., 600.
22. *Spiers & Pond, Ltd. v. Bennett* (1896), 60, J.P., 292.
23. *The World's Tea Company v. Gardener* (1895), 59, J.P., 358.
24. *Fife v. McLaughlin*, 30, Scot. Law Reporter, 899.
25. *Bischoff v. Toler* (1895), 59, J.P., 692.



# YORKSHIRE RELISH.

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## CAUTION.

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**WILLIAM POWELL** (Trading as Goodall, Backhouse & Co.)

**v.**

**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

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**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

65 & 66, Chancery Lane, London,

*Plaintiff's Solicitor.*



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# Food & Sanitation

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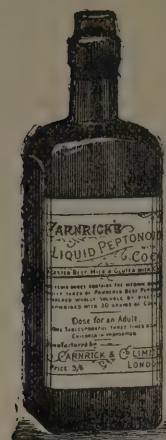
SIR HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

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handed in the following analysis and report on the water taken from the tap on May 28th:—

|                                         |     |     |     |             |
|-----------------------------------------|-----|-----|-----|-------------|
| Total solid matter                      | ... | ... | ... | 5'5         |
| Albumoid ammonia                        | ... | ... | ... | 0'009       |
| Free                                    | ... | ... | ... | 0'010       |
| Nitrogen or nitrates                    | ... | ... | ... | nil         |
| Previous sewage or animal contamination | ... | ... | ... | nil         |
| Chlorine                                | ... | ... | ... | 1'1         |
| Sulphates                               | ... | ... | ... | very slight |
| Oxygen absorbed in 15 minutes at 80° F. | ... | ... | ... | 0'029       |
| " " 4 hours at 80° F.                   | ... | ... | ... | 0'081       |

The water, says the report, yields no evidence of animal or sewage contamination, but it does apparently contain more than the usual amount of vegetable matter. Although in this respect its quality is distinctly below the average for the time of year, yet considering the abnormal weather its condition is not surprising, nor apart from the taste and smell is it such as to cause nuisance. The offensive taste and smell may have arisen from several causes, but, from information received from Mr. Priestley, some of these possible causes may be excluded, and this is corroborated by the rapid disappearance of the taste and smell. This being so, the analyst is of opinion that the taint was mainly due to fermentation of the vegetable matter in the water in the service reservoir. The water was apparently sweet when it flowed into the chamber, but became contaminated in its passage through. Organic matter continually undergoes change, and it is affected by sunlight, and in covered reservoirs the extension of such contaminations would not as rapidly take place. In concluding his report, Mr. Hughes suggests as a remedy the continuous ventilation of the chamber, and says that although such taint is offensive, in places where it has before occurred it has been usually of a very temporary character, and has never proved prejudicial to the public health.

A suspected covered reservoir has been emptied, and is being thoroughly cleansed.

In London we are less fortunate, for our Government conspired with the water monopolists to rob the public, and shameless experts issue the most outrageous lies as reports on a non-existent purity of our water supply. At the last meeting of the Hackney Vestry the Sanitary Committee submitted two reports from Mr. Leo Taylor, the public analyst, on two samples of water taken from the Lea, showing them to be very badly polluted.

It was decided to send all reports of this kind to the Local Government Board, whose inspector is making investigations into the matter; and also to the London County Council and the Lea Conservancy Board.

It might be better still to send some of the water to Lord James and the members of the Cabinet, and invite these artful gentry to drink it neat. They might then better realise the scandal of the water game, and how intolerably it stinks.

### TINNED HORSE FLESH—WHERE DOES IT GO TO ?

THE statement made by the Belgian Minister for Agriculture that six thousand old English horses were last year sent from this country to Belgium and converted into tinned meat, has led a *Morning* reporter to make enquiries into the matter. The Belgium Minister's statement is rather under than over the mark. The horses sent from London to Antwerp, Ostend, or Ghent, are dispatched in batches of from five to twenty at a time. The General Steam Navigation Company are the principal over-sea carriers between this country and Belgium, and in the course of a year convey many horses from London to various Belgian ports. Of course, the responsibility of the Navigation Company ends with the delivery of the animals. The horses thus conveyed are of all classes, and there is no recognised exporter. The bill of lading is

## Food and Sanitation.

SATURDAY, JUNE 6TH, 1896.

### CARDIFF'S WATER SUPPLY.

LONDON is not alone unhappy in the quality of the semi-filtered sewage and drainage sold as water by its water monopolists. Cardiff has recently had the experience of an offensive taste and smell in the water supplied for public consumption, and to allay public alarm the water has been analysed by Mr. Robert Hughes, the borough analyst of Cardiff, who has



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made out to personal delivery, and the consignee can, by simply writing an instruction on the back of the bill, make over his horses to any one he chooses. The horses sent out are mostly ex-omnibus or cab animals, which have met with an accident, or are worn out with work, or that have contracted some disease. Very few of them have much flesh on their bodies at exportation, and most of them are old. So far as can be ascertained the animals on being landed are examined by an expert, and those which may eventually prove useful for field work are sent to a farm to be doctored up before sale to one of the Belgian farmers. The remainder are conveyed to the slaughter-house, and when killed, it is understood that the hoofs are boiled down for glue, the skin made into cheap mats, the bones used for manure, and the flesh—there is the mystery. If the Belgian Minister is right, the flesh becomes tinned meat, but very little of it comes to England. With the exception of meat extracts and potted tongues very little tinned meat comes to this country from Belgium. A large trade is, however, done in German sausages and black puddings. Some of the horse-flesh may be worked up into these articles of commerce. The general impression, however, seems to be that the Belgians themselves eat the tinned horse-flesh, and not the people of this country. It may be here noted that all the principal dealers in tinned meats deny absolutely that they obtain any of their goods from Belgium, and assert that their tinned beef is the flesh of the ox, and not of the horse. It would be interesting to know who the Belgian merchants, who thus deal in English horse-flesh, are.

## DEALING WITH DISEASED FOOD VENDORS.

At Clerkenwell, on May 30th, Francis George Bolton, junr., of 45, New-road, Littlehampton, was summoned, before Mr. Horace Smith, by Sanitary Inspector Billings, of the Holborn Board of Works, for having on the 18th April deposited at 93, Charterhouse-street, the premises of a meat-salesman, four pieces of diseased beef which were unfit for human consumption. —The defendant pleaded that he had sent the meat up as cat's-meat only.—Mr. Horace Smith imposed a fine of £25, with £2 2s. costs.

At Wellingborough, on May 29th, Walter Collins, fishmonger, of Leicester, was summoned for exposing for sale mackerel in an unsound state at Wellingborough, on May 13th. Mr. J. T. Parker, clerk to the Wellingborough Urban Council, prosecuted, and Mr. A. Wright, of Leicester, defended. —Mr. Parker in his opening statement, mentioned that over 400 mackerel were seized, and as the penalty was £20 per fish the amount of the maximum penalty would be about £9,000.—Henry Wills, a cowman, deposed to buying three mackerel from defendant's stall in the market. His wife washed them well, but they were in such a

stinking condition that he could not eat them.—George Bayes, sanitary inspector to the Wellingborough Rural District Council, said that on the day named he was in the market, and saw a large quantity of mackerel being sold by three young men. They said they were Mackintosh Bros., from Dundee, and they kept their own boats, which enabled them to sell things cheaply. Witness bought three mackerel for sixpence, and communicated with the medical officer of health.—Dr. W. W. Clark (medical officer of health) said the fish brought to him by the previous witness was decomposed, and unfit for human food. The eyes were sunken, the gills dark, and the flesh very soft. He went to the market, where he saw quite sufficient to justify him in ordering the lot which were on sale to be seized. In one of the boxes the mackerel at the top were apparently good, but on cutting through them he found that decomposition had set in.—Mr. Wright, in defence, said that the firm of John Collins and Son, of Leicester, were the owners of the fish, and they sent out Mr. Walter Collins with two other men for the purpose of selling mackerel in Wellingborough Market. Their business was to sell on commission fish that was consigned to them from various parts of the coast, and it had absolutely nothing to do with them whether the fish arrived in a sound condition, or whether it had to be condemned, for they were not chargeable in respect to any which had to be condemned; therefore they had no possible object in attempting to sell fish which was bad. Assuming, however, that the fish was bad, he had to rely upon the fact that the weather on the day in question was abnormally hot. When he started to sell the fish defendant believed it to be perfectly sound and fit for sale, and he could not possibly tell the exact moment when a quantity like this might begin to turn. The Wellingborough Market was a very exposed place, and where the fish was placed there was no shade whatever. This firm had been established in Leicester for 32 years, and had never been before the magistrates. On the Tuesday night before the fish were brought to Wellingborough, the firm were so satisfied with their condition that they sent off a cheque in payment to the consignors.—Henry Collins, a member of the firm of John Collins and Son, was then called. He said it was not a loss to them if they had any of their fish condemned, so that if the fish in their opinion was bad they would have no object in sending it out. The fish in question was consigned to them by the Peel Fishing Company, of Fleetwood, and it reached Leicester on Tuesday morning, May 12. A portion of it was disposed of the same day, and the rest was iced down under his superintendence the same night, two or three stone of ice being put on each box. The next morning he sent 21 boxes to Wellingborough. In all consignments of mackerel some of the fish would be broken, the ice being responsible for that, and to an inexperienced person such fish would look bad.—One of the defendant's salesmen, named Robinson, was the next witness for the defence. He considered that the whole of the fish was very good. Some of the mackerel had burst, and they had to be sold without being washed, as the toll collector would not let them have any water.—Maurice Isaacs, of Leicester, said he opened all the boxes that were brought to Wellingborough. He never saw better mackerel, and the three sold to Mr. Bayes were perfectly good.—Joseph Manger, coal merchant, of Midland-road, Wellingborough, said that he was in the market on the day named, and was attracted to the defendant's stall by a rumour that some fish had been seized. He knew what fish was, having had about ten years' experience of the trade, and he expressed the opinion that it was a downright shame to take such fish away, as they were in splendid condition.—Wm. Henry Berry, of Leicester, said he had known Messrs. Collins for years, but never to have any fish condemned only at their own request.—Wm. Henry White,



hair-dresser, Wellingborough, Wm. Pettitt, Jane Parker, Mary Allen, Harriett Orton, and Henry Carey, all of Wellingborough, gave evidence as to buying some of the mackerel, and declared it to have been fresh.—Arthur Henry Cole, inspector of food, of Leicester, said he inspected the fish market, including the stand occupied by Messrs. Collins, of whom he had no complaint. He agreed that fish might be erroneously taken as being bad if they were broken.—The Chairman said the Bench did not think there was any reason why they should give a different decision in this case to the last one. (They had just previously fined Fred Wildridge, a Wellingborough fishmonger, £20 and costs for exposing twenty-two unsound mackerel for sale). The weather on those days was of a character which made it difficult to keep fish in a proper state. On the other hand, such men as defendants were supposed to be experienced, and if they liked to travel to those markets they must take the consequences. With the idea of putting a stop, not only to Leicester people, but people in other parts of the country, coming and selling fish of that description, defendants would be fined £20, with £2 3s. costs.

#### FRAUDULENT FLOUR.

IN view of the extremely low price to which wheat has been driven down by foreign competition, says the *Globe*, it might be thought that there would be little or no adulteration of flour. That, however, is by no means the case; the dishonest practice flourishes in many parts of the kingdom, more particularly in the Midlands. A correspondent of a Birmingham paper who has been pushing enquiry into the matter asserts that a scandalously adulterated article is on open sale at hundreds of shops there. It is made up in paper packets, and professes to be pure flour, but on analysis the contents prove to be largely constituted of maize, potato starch, rice, and, indeed, almost anything that can be given the appearance of wheat flour. To make matters still worse, the chief consumers of this nutritious rubbish are the working classes, the very people who most need nourishing food, and who are the largest consumers of flour in the form of bread. Surely such wholesale fraud as this should come within the purview of the Sale of Food and Drugs Act. We fail to see any difference between palming off margarine as butter and foisting on poor people as wheaten flour a mixture in which that wholesome ingredient has very little place. But for some inscrutable reason, the inspectors appointed under the Act appear to consider that flour lies outside their province. At all events, while prosecutions of buttermen and grocers are numberless, there is, we believe, no case on record of any manufacturer or vendor of fraudulent flour being brought into court.

Yet his cheating is far more inimical to the physical well-being of the country than the substitution of margarine for butter, or chicory for coffee.

#### COPPERED PEAS.

AT Liverpool, on May 27, G. H. Holmes, Myrtle-street, was summoned for selling preserved peas found to contain 2·88 of crystallised sulphate of copper. Mr. Collingwood Williams, public analyst, stated that he had met with very few samples of preserved peas that did not contain some percentage of sulphate of copper, which gave the peas a good colour. The 2·88 of copper was an amount injurious to health.—Mr. Rudd, who appeared for the defence, stated that, having regard to the uncertainty of the law on these points, he was agreeable that the offence should be treated as a technical one. His client had, of course, sold the peas as he himself had bought them.—Defendant was fined 20s. and costs.

#### FATS OF THE BODY.

IN the processes that go on in the body three groups of carbon compounds undergo a combustion in the true sense of the word—albumins, carbohydrates, and fats. Regarding the different functions of these materials only this much is certain; that albumin is indispensable to the building-up of new cells and the repair of waste material, and that carbon compounds, free from nitrogen, serve as fuel for the production of heat and mechanical work. These compounds consist of carbohydrates and fats, and very probably of albumins also. It can also scarcely be doubted that the animal body can avail itself not only of fat but also of carbohydrates as fuel; but it is also to be assumed that in the normal physiological conditions fat and the carbohydrates play different rôles. It should be noted that Nature herself has given to the infant in milk—without doubt an absolutely appropriate means of nourishment—not only albumin but fat and carbohydrates. In most kinds of animals, especially in men, the proportion of sugar in milk is greater than that of fat, while on the other hand, Dr. Gurdy, of St. Andrew's, has found in whale's milk the enormous amount of forty per cent. of fat. The general opinion is this, that the strength-producing fuel in muscle is one of the compounds belonging to the carbohydrate group, glycogen or some similar compound, by whose combustion, together with the production of work, some heat is also inevitably produced. In ordinary circumstances this suffices to raise the bodily temperature to its normal height. But if this cannot be reached thus, other substances must be used as fuel. Heat produced by muscular work in the animal body is best obtained from the carbohydrates of the food, but beside this the indispensable production of the heat is best attained through fats. This corresponds with the instinctive choice of foods made by men, who in the tropics eat little fat, while the dweller in Polar regions devours large quantities of it to feed his bodily combustion. Moderate use of alcohol causes a deposit of fat, because, while alcohol is not turned into a fuel in the muscle and nerve cells, it serves as a pure fuel in the organism, and replaces the combustion of fat. The reason that the use of alcohol is so dangerous in the Polar regions is that alcohol favours the throwing-off of heat in great degree, so that the effect is as if the stove in a room should be heated red-hot and then all the doors and windows should be thrown open.—*Der Stein der Weisen* (Vienna).

#### THE POTTED HORSE TRADE.

JOSEPH KEATES, 18, greengrocer, 7, Gallossen-road, Plumstead, was charged at Woolwich Police-court, on May 29, with working a horse in an unfit condition.—P.C. Baker said he stopped the prisoner in Plumstead-road driving a horse with two sores on the back, lame, in poor condition, very old, and totally unfit for work.—Prisoner said he bought the horse the previous Sunday for £4 of a man named Smale, who was in court.—Mr. Marsham left the bench and inspected the horse. Returning, he called Smale and told him that it was not worth fourpence. He was in the habit of selling worn-out horses, with the result that the buyers were charged in that court with working them in an unfit condition. He cautioned him that if he continued to do so he would get into serious trouble.—Smale: I will give the lad £3 and take the horse back.—Mr. Marsham: What would you do with it?—Smale: I would sell it to make potted meat of.—Mr. Marsham: I suppose you would send it to Belgium?—Smale: Yes, I should get £3 for it there.—Mr. Marsham remanded the accused for a week on bail, telling him that if the horse was destroyed in the interim he would take it into consideration.



## TINNED FOOD POISONING.

MR. D. WIGHTMAN, coroner, held an inquest at the Royal Hospital, Sheffield, on May 29, on the body of Ernest Foster, aged 16 years, son of Alfred Henry Foster, fork maker, of Hill Bank, who died on the 26th ult. The deceased went home one day last week and complained of his throat. The next day he seemed much better, and on the Saturday he appeared to be again in his usual health. Towards night, however, he began complaining of feeling unwell, and went to bed with pains in his head and other parts of his body. He gradually got worse, and Mr. W. Favell, surgeon, was sent for, and ordered his removal to the hospital. There he was medically attended by Mr. G. L. East, but died on the 26th ult. A post-mortem examination was made by Mr. East, the house surgeon, who found evidences of the action of an irritant poison. Deceased said he had eaten some tinned lobster and pork pie.

A WEEK or two ago the family of Mr. T. Ballan Stead, secretary of the Ancient Order of Foresters, at present stationed in Dundee, were seized with severe illness after partaking of a quantity of preserved meat. All the members of the family who partook of the dish suffered more or less severely, but they have all recovered with the exception of Mr. Stead and a young woman who was employed in the house as a domestic servant. The girl lay dangerously ill for nearly a fortnight, but she seems to have recovered so far as to be able to be removed to her parents' house near Arbroath. After she returned home, however, she experienced a relapse, and is now in a very critical condition. Mr. Stead is still suffering pain, and continues under medical treatment.

## TEA FICTIONS AND FACTS.

THE Cheshire County Analyst (Dr. Carter Bell) in his report to the Council stated that recently "A sample of tea which was submitted to me privately for analysis is worth a passing notice. This tea was bought on the understanding that it was free from tannin, which is so injurious to people suffering from indigestion. The price paid was 3s. 4d. a pound; it made a very dark infusion, which many would think denoted great strength. I was careful not to extract the whole of the tannin, but simply treated the tea in a practical manner with boiling water, such as is done every day in the teapot, and gave it ten minutes' infusion. The amount of tannin found was 11.5 per cent. In my opinion this sample was either an Indian or a Ceylon tea, which, instead of containing less tannin, contains more than do the China teas; thus the Indian and Ceylon teas contain from 7 to 12 per cent. of tannin, but the China teas only give from 3 to 4 per cent. It is a folly for anyone to expect to buy tea without tannin, but if he wishes to buy tea with the largest amount of theine, with the least amount of tannin, then he must choose the China teas in preference to the Indian and Ceylon, for in the former it is about one to one, in the latter one to two—that is to say, for every one of theine in China, you only have one of tannin, but in Indian and Ceylon you have double and treble that quantity."

## SALE OF POISON IN SPIRIT BOTTLES.

A CORONER'S jury sitting at the Marylebone Coroner's Court on May 27 condemned the sale of fluid poisons in bottles used and marked by the Licensed Vintners' trade for intoxicating liquors. It appeared that a house painter, living at 102, Great Titchfield-street, W., drank oxalic acid out of a publican's spirit bottle, which bore a red label marked "Poison," and died from the effects in the workhouse infirmary. How much longer are we to be without a compulsory special shaped poison bottle?

## ADULTERATION IN WEST BROMWICH.

AT West Bromwich Police Court, on June 1st, Daniel Ramsall, of the Three Crowns Inn, Hill Top, was charged with selling whisky 42.8 per cent. under proof on May 11, and was fined 20s. and costs.—Ellen Forest, of the Golden Lion Inn, Hill Top, was also fined 20s. and costs for selling rum which was under proof.

James Smith, of Wigmore Farm, was summoned under the Food and Drugs Act for selling adulterated milk on the 11th inst. Mr. A. Caddick (Town Clerk) prosecuted.—George William Davies, inspector, spoke to taking samples of milk from two cans which were being taken to Wigmore Schools. Analysis showed that in one can the milk was 12 per cent., and in the other can 10 per cent. deficient of its natural fat.—For the defence Mr. J. S. Sharp submitted that the man who milked the cows did his work imperfectly, with the result that the richest part of the milk was retained by the animal.—The Stipendiary said it was a hard case, and inflicted the small penalty of 20s. and costs.

## CONSERVING INSANITARY FITTINGS.

By a recent decision of the Court of the Queen's Bench, in the case of the Vestry of Fulham v. Solomon, notices moved by Sanitary Inspectors, terming everything connected with a water closet "foul and offensive," if the fittings and all appertaining thereto are not in accordance with the recently-made bye-laws of the London County Council, are void, and such bye-laws do not refer to any closet and its fittings, if constructed before such bye-laws were approved by the Local Government Board, June 28th, 1893. That the said bye-laws are prospective only, and refer solely to closets that may be constructed after that date. Sanitary notices, therefore, relating to closets constructed before June 28th, 1893, making requirements under such bye-laws, are invalid.

## HOW DIPHTHERIA IS SPREAD.

AT Thames Police Court on May 29, Morris Milberg, a milk purveyor, of 14, Bedford-street, Mile-end, appeared to answer two summonses, taken out by Mr. H. J. H. Tuck, one of the County Council inspectors, for not removing all milk utensils used for the sale of milk, while having an infectious disease on his premises, and for not giving notice of the case.—Mr. Collman, who prosecuted on behalf of the County Council, said defendant was summoned for breaches of the regulations providing for precautions to be taken by purveyors of milk. On April 10 defendant's child was taken ill, and Dr. Lynch, who was called in, certified the case to be one of diphtheria. The same day, Mr. Thwaites, sanitary inspector for Mile-end, in consequence of a communication from the doctor, called on Milberg and cautioned him against selling milk while infection remained in his house. The sanitary inspector also recommended defendant to give notice of the outbreak to the County Council. Four days later Mr. Tuck visited the shop and found milk exposed for sale, and also milk utensils used for the sale. Defendant said he had not been selling milk, but what was there was for his own use.—Defendant admitted having had a copy of the regulations, which, he stated, he had not read.—Evidence bearing out the above having been given, defendant, in reply to the charge, said he did not know the rules.—Mr. Dickinson, replied in that case he should not carry on the business. That was the continual excuse made by foreigners, and had it not been for the courtesy of the parish authorities the Council would have had no notice of the affair. For not giving the proper notice defendant would be fined £3 and 25s. costs.



## A MILKMAN'S DODGE.

A MILKMAN at Small Heath, says the *Birmingham Mail*, relates a story of how he successfully dodged one of the milk inspectors this week. He was going his rounds when the officer hove in sight. The man with the can gave a violent shudder, turned pale, and instantly fell down, upsetting the whole of the milk. The inspector, on reaching the scene of the mishap, inquired of the milkman if he had hurt himself. No, he had not injured himself, he said, but what troubled him was the disappointment his customers would feel at not getting served. The inspector uttered a few cheering words and walked away. Directly he had gone the milkman became convulsed with laughter, and one of the bystanders asked him to explain where the joke came in. "Well, you see, I've only lost the milk by upsetting it. If that 'bloke' had taken a sample it would have cost me £5."

## A BACON TESTING CASE.

At the Diss Petty Sessions, on May 27, before the Rev. C. R. Manning (chairman), John Tudor Frere, and E. Mann, Esqrs., Henry Samuel Morley, manager to the International Tea Company, Ltd., at Diss, was charged upon the information of James Alger, Inspector of Nuisances to the Urban District Council, with having exposed one piece of bacon for sale, unfit for the food of man; also with having three pieces of bacon in his house intended for sale, unfit for the food of man, at Diss, on May 6—Mr. T. C. Blofeld, barrister (instructed by Mr. H. O. Lias, clerk to the Urban District Council) appeared for the prosecution, and Mr. J. P. Grain, barrister (instructed by Mr. F. W. Beck, 21, Lime-street, London), for the defence.—Mr. Blofeld, in opening the case, explained at the outset that the information was laid under the 117th section of the Public Health Act, 1875, and which made anyone exposing for sale, or having in their possession intended for sale, amongst other things, meat, unfit for the food of man, liable to a penalty not exceeding £20. Having detailed the nature of the evidence he should adduce, the learned counsel said he did not impute that the International Tea Company knowingly or wilfully conducted their business so as to endanger people buying bad bacon, but their manager in this case ought to have secured them against the danger. He called

Samuel Baldwin, residing at Palgrave, who described himself as formerly a butcher, but now a dealer. He deposed that on the afternoon of the 6th of May, seeing a piece of bacon marked 4½d. per pound in the window of the International Tea Company's shop, he entered and asked the young man if he might look at it. The attendant produced it, and upon examining it, witness remarked, "This is not good enough for me." The bacon was flyblown, gone at the bone, and smelt strongly. The attendant said the smell would go off in the boiling, but witness refused to buy it, and went down the town. Returning in half-an-hour he saw the same piece of bacon ticketed in the window. He felt annoyed at seeing this, and called the attention of Mr. Palmer, who kept a shop opposite, to the circumstance. Witness went into the shop again, and asked the young man to weigh him the piece of bacon he had seen before. The young man replied that he could not, because it had been sold. Witness then went in search of Mr. Alger, the Inspector of Nuisances, whom he met, and they returned together, and went into the Company's warehouse, and Mr. Alger asked the young man to show him the bacon which witness had first seen, but he replied that it was sold. Witness asked who had bought it, but got no reply. The young man brought first one and then a second piece of bacon, but witness would not admit that either was the piece which he first saw. The young man brought a third piece, which he thought was something like the piece he wanted. He would not, however, swear that it was the same piece, because it appeared to him to have been cut and trimmed. Witness and Mr. Alger saw several pieces of bacon in the warehouse, three of which smelt very high indeed, and they took them, together with the other piece from the shop, to Mr. Hubbard, the Medical Officer of Health, who examined them.

Cross-examined by Mr. Grain: He denied that he first went to the Company's shop to find some bad meat.

Who sent you?—No one, sir.

You went to take the bacon home to eat?—Yes, sir.

Then what did you want it for a second time, if it was

bad?—I went the second time because I had cautioned the young man that it was not fit for food, and I felt angry.

Did you use bad language?—I don't remember, sir.

Is it true that you went on at an alarming rate and used very bad language?—No, sir.

Mr. Blofeld: That might turn the air blue, but it would not turn the bacon bad. (Laughter.)

Mr. Alger, Inspector of Nuisances, gave evidence as to accompanying the last witness to the shop. The piece of bacon referred to smelt very badly, and the three other pieces taken from amongst others in the warehouses were also very bad. They seemed to be green, wet, and flabby, and were condemned by a magistrate next morning after having been pronounced as unfit for human food by Mr. Hubbard.

Cross-examined: He did not test the bacon by probing it with a skewer or cutting it with a knife. He went purely by the smell. After the examination of the bacon by the four scientific gentlemen called in by the Company, it was not suggested that the matter should not be carried further. Mr. Beck the defendant's solicitor, who was present, said the bacon was rather high. (Laughter.)

Didn't he say he would not mind eating it next morning?—No, Sir; I should have been sorry to have eaten it.

Cross-examination continued: At a meeting of the District Council, held the same evening as the seizure, it was decided to take proceedings against the Company.

The Chairman: It was the ordinary monthly meeting, and not called for the purpose.

Mr. Hubbard, medical officer of health for the district, deposed to having examined the bacon in question. With regard to the first piece, there was nothing very noticeable, but upon applying his nose where the upper bone of the gammon protruded, there was a decided taint. As to the others, where the shoulder-blade had been removed there was a pale flabby appearance, and a very strong, unpleasant odour. There was also a slight moist exudation, which was very offensive, and it extended so deeply into the meat that he did not deem it necessary to cut the meat about.

What did the smell arise from? Was it from decomposition of the animal tissue?—I should say so decidedly. The exudation would heighten the smell undoubtedly.

Is animal tissue in a state of decomposition fit for human food?—Not in my opinion.

Was the gammon piece fit for food?—I don't consider that meat that is tainted should be exposed for sale.

Could anyone eat that piece of gammon with decomposed tissue without being liable to considerable danger?—I think not.

They would suffer from sickness and diarrhoea?—I believe such symptoms have arisen from eating such meat.

Cross-examined by Mr. Grain: He came to the positive conclusion that the bacon was unfit for human food. He was present when four scientific gentlemen examined the bacon on behalf of the Company on May 8, and he believed that he remarked that the bacon seemed to smell better than it did when he first examined it.

But if it were decomposed, would it not in the ordinary course have been in a worse state on the 8th than on the 6th?—Under different circumstances it might; but witness went on to explain that the bacon, having been removed to a shed, where there was a freer access of air, the exudation might have somewhat dried.

Do you say the meat, as a whole, was unfit for human food?—I don't say that at all. I say that the meat presented to me was not wholesome.

Then a portion of it was fit for human food?—Possibly.

Let us use the good old word "stink." Would you condemn a ham that stunk at the knuckle as unfit for human food?—If meat stunk anywhere I should condemn it.

Cross-examination continued: After he learnt that the four scientific gentlemen had expressed an opinion contrary to his, he propounded the question to the Chairman of the District Council whether it would not be better to withdraw from the proceedings. The Chairman then asked him what his opinion was, and he told him that he still considered the meat unfit for human food.

Henry Jones, dispenser to Mr. Hubbard, spoke to the smell of the bacon being so offensive when in the surgery for examination, that it had to be speedily removed.

This concluded the case for the prosecution.

Mr. Grain, addressing the bench for the defence, referred to the extensive business connection of the International Tea Company, and, therefore, they were most desirous to do everything they possibly could to prevent anything of an unwholesome nature being distributed amongst the public. He read the rules and regulations, and which were also given verbally to the managers of the various branches, as to taking every precaution to prevent the sale of unsound goods. He (the learned counsel) submitted that the mere



fact of selling unwholesome food would not bring a man within the statute; it must be so unwholesome as to be unfit for the food of man.

Mr. Blofeld pointed out that the words of the section were in the alternative unwholesome "or" unfit.

Mr. Grain, continuing, said he would not trouble the Bench upon that point, because the only issue they had to try was whether or not Mr. Hubbard was mistaken in the view he had taken. The learned counsel then sketched the weight of evidence he should call, and which, he maintained, would conclusively prove that Mr. Hubbard was wrong.

Dr. Thresh, Medical Officer of Health to the Essex County Council, said he examined the bacon on the 8th of May. The first piece presented no external appearance of anything being wrong with it, but in the cavity the exudation made a very offensive smell. He made the usual test with litmus paper, and there being no alkaline reaction demonstrated that there was no putrefaction. He cut the piece in two, and it was at once obvious that the meat was perfectly sound. In another piece of bacon he could not find anything important at all—there was no smell. In the third and fourth pieces there was not the slightest doubt in his mind that they were perfectly sound.

Mr. Grain: Is it then correct to say that not one of these four pieces was unfit for human food?

Witness: Undoubtedly.

Cross-examined: He admitted that if the meat was saturated with the exudation it would be unwholesome, but in the bacon in question it was only necessary to wash it thoroughly with water.

Dr. Barnes, medical officer for the Eye Urban and Hartismere Rural District Councils, gave similar evidence.

Mr. George S. Elliston, Medical Officer of Health for the Borough of Ipswich and the Samford and Bosmere and Claydon Rural District, further corroborated. Witness, however, in cross-examination, considered that with regard to the exudation, the place should be washed out with borax to make the meat completely wholesome.

Re-examined: The bacon was not unfit for the food of man, and he would not have condemned the pieces.

Mr. Hehner, public analyst for a number of counties, and president of the Institute of Chemistry, also emphatically affirmed that the bacon was perfectly fit for human food.

Mr. Goodwin, manager and salesman to Messrs. Boyd and Company, a large firm of bacon shippers at London Bridge; Mr. Fry, formerly a manager to Messrs. Hudson Bros.; and Mr. Cudley, the provision manager of the International Tea Company, gave similar evidence.

The Chairman (after a private consultation), said the Bench considered that the Urban District Council were justified in bringing the case before them as a case of strong suspicion. It was admitted that part of the meat was not fit for food without treatment which unsuspecting persons were not likely to apply. At the same time the weight of evidence was greater on the other side, and therefore the case would be dismissed.

At the examination held in connection with the Sanitary Institute, at the Medical Examination Hall, Victoria Embankment, on Friday and Saturday, Mr. J. H. Clarke, the sanitary inspector under the Chiswick Urban District Council, passed the test in practical sanitary science. By virtue of his success in this examination Mr. Clarke is entitled to membership of the Sanitary Institute. In 1891 Mr. Clarke passed the sanitary inspectors' examination of the Sanitary Institute, and in April of last year he was awarded the certificate of the British Institute of Public Health.

Mr. ALEXANDER QUINLAN, of Bradford, who for the past five years has acted as the inspector under the Food and Drugs and Weights and Measures Acts for that district, has been appointed to a similar position by the Kent County Council.

## MARGARINE PROSECUTIONS IN GLASGOW.

SEVERAL prosecutions under the Margarine Act were heard in the County Buildings, Glasgow, on May 25, at the instance of the sanitary authorities. Sheriff Fyfe occupied the bench and Mr. John Lindsay prosecuted. John Kerr, of J. and A. Kerr, 217, Gallowgate, denied exposing margarine for sale in his premises on the 26th April without having the necessary label attached. The evidence went to show that while several cheap qualities of margarine were labelled, the more expensive were unlabelled. It was maintained by respondent that he had been cleaning the window, and had not time to label the kits as they came in. A fine of £2, with 30s. expenses, was imposed. C. M'Dougall, 407, New City-road, exposed margarine in his shop on the 22nd April, without having the necessary label attached, for which he was fined £2 with expenses. Bernard M'Iver, 12, Stephenson-street, Calton, admitted to having, on the 22nd April, sold half a pound of butter containing 94 per cent. fatty matter extraneous to butter. Mr. M'Dowall, agent, explained that M'Iver was removing from another shop to Stephenson-street, and that it was a lad in the latter shop who sold the margarine before his employer arrived. The Sheriff imposed a fine of 30s., being the amount of expenses in the case.

## MILK.

JAMES TUGWELL, dairyman, of Wood-street, Wootton Bassett, was summoned under section 6 of the Food and Drugs Act, for selling one pint of milk not of the nature and substance demanded, on April 18. Defendant pleaded not guilty.—Mr. Bevir prosecuted, and said that in this case the sample of milk taken contained 5 per cent. of added water.—Mr. Bevir called a lad named Robert William Curtis, who said he purchased a pint of milk for Mr. Sam Smith from a young woman named Sly, in the defendant's employ, and paid three-halfpence for it.—Mr. Smith gave formal evidence, and produced the Analyst's report. He said the milk would not be accepted by any dairy company.—Defendant said it was a very wet morning on April 18, and his man had three-quarters of a mile to carry the milk in an open bucket. He also mentioned that his land was poor. He brought some witnesses when the case first came on a fortnight ago, but after hearing the decisions then in other cases he did not think it necessary to bring witnesses now.—The Bench, after retiring for consultation, fined defendant 10s. and 8s. costs.

WALTER BERTRAM GRIFFITHS, coffee-house keeper, of Newport-street, Swindon, whose wife appeared, was summoned by Mr. Sam Smith for selling two glasses of milk, from which 33 per cent. of the natural fat had been abstracted, on May 1st.—Mrs. Griffiths had nothing to say except that the milk was intended for their own family use.—Mr. Sam Smith and his assistant, Henry Sawyer, stated the facts.—A fine of 10s. and 8s. costs was imposed.

JOHN KILMINSTER, dairyman, of Cricklade, was similarly summoned for selling milk, from which 80 per cent. of the fat had been abstracted, on April 25th.—Defendant's son appeared.—Mr. Bevir prosecuted in this as in all the other milk cases.—Evidence was given by a lad named Robert William Curtis, employed by Mr. Smith, and also by the Inspector. The latter said that the sample purchased from defendant's wife was analysed and showed that 80 per cent. of the fat had been abstracted. Mr. Smith added that another sample of new milk was taken from defendant's son about the same time, and that was found to be genuine.—Mary Kilminster, wife of defendant, gave evidence to the effect that she said at the time the milk was not new. Her son had all the new milk selling in the street, and Mr. Smith went and took a sample of that also.—The Bench retired for consultation.

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STEPHEN JOHN THOMAS, of the Manor House Coffee and Dining Rooms, Old Swindon, was similarly summoned, the milk in this case having had 22 per cent. of the fat abstracted.—Evidence was given by Mr. Sam Smith and his assistant.—For his defence Mr. Thomas called Mr. J. B. Jenner, dairyman, of Swindon, who supplied the milk to defendant. He said he felt so certain about the milk being good that he had the portion of the sample which was left with Mr. Thomas sent away to be analysed by Mr. Stokes, a public analyst, who said there had been 12 per cent., and not 22 per cent., of the fat abstracted. But this was 16 days later, when the sample had been affected by keeping.—Defendant said if he had offended against the law he had done so unwittingly.—The Bench convicted, and fined defendant 10s. and 9s. costs.

MARY ANN FLOCKS, coffee-house keeper, of 39, Regent-street, New Swindon, was similarly summoned for a like offence on the 1st May. In this case 32 per cent. of the natural fat had been abstracted. The facts were stated by Mr. Sam Smith and his assistant, Sawyer.—Defendant said the milk was taken from a jug in which it had been standing some hours, and some of it had been previously used for putting in tea and coffee.—Miss Nellie Flocks, defendant's daughter, was called, and gave evidence in corroboration of her mother's statement.—The Bench convicted and fined defendant 10s. and 9s. costs.

WILLIAM BROWN, of Marlborough, proprietor of the Kooloo Coffee-house, Wood-street, Swindon, was similarly summoned. In this instance the analysis showed that 47 per cent. of the natural fat had been abstracted. The evidence was similar to that in the previous cases.—Defendant called Miss Brown, waitress at the Kooloo, who said the milk was brought to the Kooloo at seven o'clock in the morning and allowed to stand some hours, after which the cream went into the first glass that was poured out.—Defendant said he sold the milk as he purchased it, and had no intention whatever to defraud the public.—The Chairman said this was a bad case, and defendant would be fined £1 10s. and 9s. costs.—Defendant asked how he could protect himself.—The Chairman: I should advise you to buy pure milk.

HARRY BINDON, coffee-house keeper, of 69, Commercial-road, New Swindon, was similarly summoned for selling new milk from which 27 per cent. of the natural fat had been abstracted.—The evidence was the same as before, and defendant said he sold the milk just as it was supplied to him.—Fined 10s. and 8s. costs.

At Southwark, last week, Herbert J. Smith, of 117, Great Dover-street, appeared in support of an adjourned summons issued at the instance of Mr. H. Thomas, inspector appointed under the Sale of Food and Drugs Act to Bermondsey Vestry, for selling milk alleged to be deficient in butter fat to the extent of 14 per cent.—Mr. Morris, who appeared for defendant, stated that the milk was sold exactly as it was received from the wholesale dealers, Messrs. Freith and Pocock.—Mr. House, inspector to Newington Vestry, said he took a sample of milk from these wholesale dealers at the request of defendant, and submitted it to the public analyst. The certificate stated that the sample contained 2 per cent. of extraneous water, and was deficient in butter fat to the extent of 10 per cent.—The magistrate imposed a fine of 20s. and 12s. 6d. costs.

At the Sunbury Police-court, on June 1, Mrs. Annie Ellis, confectioner, Bridge-parade, Teddington, was summoned for selling new milk from which 30 per cent. of fat had been abstracted.—Mr. Walter Tyler, inspector of weights and measures to the Western District of Middlesex, caused an assistant to purchase a pint of new milk from the defendant, and on being analysed it was found that 30 per cent. of fat had been abstracted.—Mr. Young, solicitor, appeared for the defendant, and stated that the milk was taken from the bottom of a quart vessel. He pointed out that hot weather generated cream very rapidly, and that continual dipping of a measure in the milk for small quantities had deprived it of much of the fat.—Mr. Tyler said it had been held that the last purchaser was entitled to as much fat as the first one.—Mr. Young: According to the lights of common sense it is impossible to get as much cream for the last purchaser.—The Justices took a lenient view of the case, and inflicted a fine of 5s. including costs.

At Bristol, on May 27, Sarah L. Wright, of 27, West-street, St. Philip's, was summoned for selling a pint and a half of milk deficient in quality to the extent of 20 per cent. William Beer, the inspector under the Food and Drugs Act, to whom the milk was sold, said he had twice before taken milk from the same party, but on those occasions it was all right. Mr. Arkell, on behalf of Mrs. Wright,

pleaded guilty, and, having given an explanation, the bench inflicted a fine of 40s. and costs.—Samuel Parsons, of Lawn-road, Fishponds, was also summoned for a similar offence in regard to skim milk, containing 10 per cent. added water, he was selling in Great George-street, St. Philip's. Mr. Essery appeared for defendant, who was fined 20s. and costs, or in default imprisonment for 14 days.—Mrs. Home, Regent-street, Newtown, St. Philip's, was also summoned for selling a pint and a-half of milk deficient of 30 per cent. of butter fat. Inspector Beer gave evidence supporting the charge, and the defendant was fined 40s. and costs.

At the Southend Borough Petty Sessions, before the Mayor (Councillor Prevost), and other magistrates, Edward Abbott, dairyman, Southend, a member of the firm of Abbott Bros., was summoned for having, on April 6, sold milk "not of the nature, substance, and quality demanded by the purchaser."—Mr. W. T. Ricketts defended, and raised several preliminary objections. The particulars of the offence, he said, should be stated on the summons; and he quoted a case in support of his contention, but the Bench overruled the objection.—The Clerk (Mr. Arthy): Do you make any application for an adjournment?—Mr. Ricketts: No. I wish you to make a note of my objection, and insert in the summons the particulars of what we are charged with.—The Clerk added the words (taken from the Analyst's report): "One-fourth of its original cream has been extracted by skimming or otherwise."—Mr. Ricketts then said that he did not know that he was before the Court yet. The lad who sold the milk did not say he was a servant of Edward Abbott.—The Bench conferred, and decided to adjourn the case for a week; but Mr. Ricketts said that if they would make a note of his objection, he was prepared to go on. But he had another objection—he was summoned under a wrong section of the Act. The section only had to do with adulteration.—The Bench over-ruled this objection also, and Supt. Simmonds, inspector under the Food and Drugs Acts, proved the purchase of the milk and put in the public analyst's certificate. He asked the lad for "new milk," and it was taken from a can in a barrow. The lad said he was the servant of Abbott Bros.—Mr. Ricketts thought the case should be dismissed upon this evidence. The lad did not say he was the servant of the defendant, Edward Abbott.—Frank Moss, the boy, aged nine, was then called.—The Clerk: What do you do for a living?—Earn money. (Laughter.)—By what work?—Carry out milk.—Who for?—Abbott Bros.—Do you know what was on the barrow?—A churn. (Laughter.)—What words?—"Abbott Bros."—Evan Jones, employed by the defendant, said the boy had not assisted him since Christmas; but that on Bank Holiday morning he gave the boy 2d. for helping him.—The Bench decided to consider the lad one of defendant's servants; and Mr. Ricketts then raised another objection. They were not responsible, he said, for what happened before the milk came into their possession. This milk came from Mr. Thompson, a farmer, and was delivered at the shop of Messrs. Abbott. It was "warranted pure, new, and unskimmed milk."—Defendant was called, and he said that if there were a deficiency of cream, he believed it was due to a cow giving weak milk.—Edwin Norman, manager at defendant's shop, said the milk was locked up in a churn, and it was impossible to get at it while on the round or the dairy.—The Justices retired; and on returning into Court, the Mayor said that as the Bench was equally divided on the matter, the case would be dismissed.

At Leicester County Police-court, on May 27, Ernest Watts, milk seller, Ratby, was charged with selling adulterated milk at Glenfield on the 10th inst.—Supt. Ormiston put in a certificate from the analyst showing that the milk contained 19 per cent. of added water. It went on to say that 19 per cent. was the minimum, and that there was more likely 25 per cent., or one quart of water to four quarts of milk.—Mr. Fowler, for defendant, who pleaded guilty, said defendant was merely the servant of Mr. Scampton, and only a labourer, and he therefore appealed for leniency.—Mr. Sturgess, who represented Mr. Scampton, denied this, and called the foreman, who said that defendant bought the milk, but what he did not sell Mr. Scampton took back.—Defendant was fined £2 and costs, or 14 days.

ENFORCING THE FOOD AND DRUGS ACT.—At Aston, Henry Whitworth, shopkeeper, of Gladstone-street, Aston, was summoned, on May 27, at the instance of Benjamin Bolt, inspector under the Food and Drugs Act for Aston, for selling half a pint of milk deficient of 36 per cent. of its natural fat. A fine of 20s. and costs was inflicted.—A penalty of £2 and costs was imposed upon John Higgins, 33, Burlington-street, Aston, for exposing for sale unlabelled margarine.



## RAILWAY REFRESHMENT-ROOM MILK.

At Swindon last week, John Crew, manager at the G.W.R. Refreshment Rooms, New Swindon Station, was summoned, the sample in this case having 25 per cent. of the natural fat abstracted. The evidence in this case only differed from a number of other cases in the fact that at the Refreshment-Rooms twopence per glass was charged for the milk, whereas in all the other cases only one penny per glass was charged.—Mr. Smith, the inspector, said the price charged in this case was at the rate of 10d. or 1s. per quart.—Defendant said the milk had not been tampered with, but was sold as delivered to the Refreshment-Rooms. But he was not surprised at the result of the analysis after noting the way in which the sample was taken. The milk had been standing in glasses for some hours, and there was cream on it, which was settled round the glasses, and which remained after the milk was poured out. Addressing the Chairman, Mr. Crew said: "I believe you yourself had some of the milk the same morning." (Loud laughter.)—The Chairman: I didn't find any fault with it. (More laughter.)—Mr. Crew: I think not.—Mr. Edward Smith, farmer, of Eastcott Farm, Swindon, spoke to supplying the milk direct from his cows to the Refreshment-Rooms.—Miss Elsie Randell, one of the waitresses at the Refreshment Rooms, gave evidence as to seeing the milk supplied to the inspector. She also said there was a certificate hung up in the rooms to the effect that a previous sample of milk taken by the County Council Inspector was pure.—The Bench convicted, and fined defendant £1 and 10s. costs. The Chairman observed that the G.W.R. Company were in an exceptional position in regard to this matter. They charged a very high price for the article, and the travelling public who required refreshments were almost bound to obtain them from the Company's Refreshment-Rooms, and at the Company's prices.

Thomas Blatchley, manager of the G.W.R. Coffee Tavern Co.'s premises in High-street and London-street, New Swindon, was summoned for selling new milk from which 90 per cent. of the natural fat had been abstracted on the 22nd April last.—Mr. H. Bevir appeared to prosecute for the Wilts County Council, and Mr. A. W. Boodle appeared for the defence.—Mr. Bevir alluded to the large percentage of fat which had been abstracted, and said he had no doubt this Coffee Tavern was visited by a large number of the working classes, who should be protected from being defrauded by having the cream taken from the small quantities of milk they might purchase.—Henry Wm. Sawyer, assistant to Mr. Sam Smith, the local inspector under the Food and Drugs Act, proved the purchase of two glasses of milk for twopence at the G.W.R. Coffee Tavern. In cross-examination, witness said he saw the tin from which it was stated the milk had been drawn. He did not notice any cream on it. The tin was dirty, and the milk was drawn off from a tap.—Mr. Sam Smith, the inspector, gave corroborative evidence and produced the Analyst's report, showing that 90 per cent. of fat had been abstracted.—For the defence Mr. Boodle said that the G.W.R. Coffee Tavern had purchased new milk from Mr. James Lock, of Rodbourne Farm, for the past ten years, there being an oral contract to supply pure new milk. The defence was that the milk had been standing some hours in a large tin, and the cream had risen to the top. The section of the Act, Mr. Boodle added, said that "no person shall alter, etc." In this case no person had altered the quality, nature having made the alteration by causing the cream to rise.—The Magistrates' Clerk said that in a reported case of *Dyke v. Gower*, heard before Lord Chief Justice Coleridge, the facts were exactly similar, except that the percentage of cream extracted was 33 per cent., and there it was held that the effects of nature on an article did not affect the liability of a defendant under the section.—Defendant was sworn, and said he sold the milk as it was supplied to him, except that the cream was left on the top of the tin. There was only two or three quarts when the sample was drawn from the tap.—James Lock, dairyman, of Rodbourne-road, was called for the defence, and said he had supplied the G.W.R. Coffee Tavern with pure milk for the past ten years. The supply he took there on the 22nd April was pure.—The Bench retired for consultation, and on their return the Chairman said the Bench had no hesitation in convicting. They considered the case was a very bad one, and defendant would be fined £5 and £1 11s. costs.

THOMAS SMITH, refreshment-house keeper, of High-street, Wootton Bassett, was similarly summoned for selling two glasses of new milk with 50 per cent. of the natural fat abstracted, on the 18th April. Mr. H. Bevir prosecuted, and defendant conducted his own case.—Henry Wm. Sawyer proved the purchase of the milk from defendant's

wife, who told him at the time that it was not that day's milk.—Mr. Sam Smith, the Inspector, gave formal evidence as to the division of the quantity and the analysis.—Defendant said it was stated at the time of the sale of the milk that it was not new milk, and the price of stale milk was charged, viz., one penny per glass, as the price he charged for new milk was three-halfpence per glass.—Mr. Smith said the usual price for new milk was 1d. per glass.—Defendant called his wife, Eliza Smith, who said it was her usual practice to charge three-halfpence per glass for new milk, and one penny per glass when it was stale. She did not often sell milk, and had not purchased this particular lot to sell again. Defendant said he had only been in business at the shop about four months, and during the whole of the time he had only sold three or four glasses of milk. He assured the Bench that he sold the milk just as he purchased it. The magistrates retired for consultation, and on their return the Chairman said that this case was not so bad as the previous one. But the Bench would convict, and defendant would be fined £2 and 10s. costs.

## THE NOTICE DODGE.

ON Monday, at the Barnsley Court House, before Messrs. F. H. Taylor (in the chair), H. Pigott, and M. C. Halton, a point was contested during the hearing of a case under the Food and Drugs Act of much interest to publicans. The defendant in the proceedings was Arthur Roebuck, landlord of the White Hart Inn, Penistone, and he was charged at the instance of John Henry Bundy, County Council inspector under the Act, with having sold to his prejudice half a pint of whisky which was not of the quality demanded, and adulterated to the extent of 4.7 parts. Mr. S. Bruton, of the West Riding solicitors' office, Wakefield, supported the information, and Mr. Marshall, Huddersfield, defended. Mr. Bruton, in opening the case, said the prosecution was of some importance in regard to the administration of the Act throughout the county. On the 28th April, the inspector called at the defendant's house and purchased half a pint of whisky for 1s. 2d. from Mary Emma Wainwright, who was his servant. He divided the sample, as usual, into three parts, giving her one portion. After the purchase had been completed, and when the servant was told the sample was for analysis, she told the inspector there was a notice in the bar stating that all spirits were sold as diluted with water. However, there were cases which decided that if the notice was brought before the purchase was completed, the sale was not prejudiced. If the notice referred to had been brought to the notice of the inspector before the purchase was completed, he admitted the proceedings under the section failed. If it was the law that the defendants were able to inform the purchaser afterwards, then the Act was rendered practically a dead letter. There was no notice in the rooms to the effect that the spirits were sold as diluted by water, and the ordinary customer, therefore, would not know that the spirits were sold as diluted.—Mr. Bundy gave evidence of the purchase, and produced the analysis of Mr. Allen, public analyst, which certified the excess of water was 4.7 parts.—Cross-examined: Witness could not see any notice as the card produced in the bar. He did go into both rooms either side of the bar to look for a notice, but did not see one. He did not direct his attention in any way whatever to the bar. Witness stated the servant who supplied the whisky knew who he was. He could not say whether or not she directed his attention to the notice in the bar.—Re-examined: He was sure she did not mention the fact of the notice before the purchase was completed.—Henry Cox, assistant to the inspector, corroborated.—For the defence, Mr. Marshall submitted the notice was hanging in the bar, and the inspector must have wilfully shut his eyes not to have seen it. The card, he contended, was in a prominent place, and anyone making such an unusual purchase such as he did would have gone straight to the bar and seen the notice.—Mary Emma Wainwright, servant, in the employ of the defendant, stated she supplied the whisky, and when he told her it was for analysis she told him about the card, and wanted him to come and look at it in the bar, but he did not do so. No person could enter the house without seeing the notice in the bar, and in going to and from the rooms they would pass the bar three times. When he was leaving she again drew his attention to the card, but he said he hadn't seen it.—Thos. Steele, Robt. White, steel workers, and the defendant stated the notice was in a prominent place in the bar.—Defendant was fined 10s. and costs, and the Chairman advised him to take further precautions.



## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

ON the occasion of the International Congress of Fire Brigades held in the month of September, in Amsterdam, I introduced the question of the Flashing Point of Petroleum. It seems to me that this question cannot be considered as finally solved by the laws of the different European countries, principally in consequence of the fact that the minimum of flashing point as fixed by law is too low. Some writings and discussions, specially in England, prove that this opinion is also held there in chemical circles. In Germany such discussions have not been published so much. But if one considers that every year several hundreds of human lives, and thousands of wounded, fall as a sacrifice to petroleum, and that, on the other hand, the material damages, the waste of capital by petroleum is exceedingly great, and that, further, a constant feeling of insecurity and threatening danger exists in many who use petroleum, it is certainly time to introduce a discussion on the question of the Flashing Point of Petroleum, and the commercial and industrial questions connected therewith, and to call out the expression of opinions of those who are instructed in the matter.

The Congress of Fire Brigades has, by a great majority, expressed the wish that the Flashing Point of Petroleum should be in future raised to  $104^{\circ}\text{F}$ . (Abel). The introduction and discussion which preceded this vote—in some points shortened, in many points greatly increased—forms the basis of this essay.

The circumstance that, when about thirty years ago petroleum appeared in the market, the new oil proved itself much more dangerous than the usual vegetable oils, has led to the result that in most countries regulations were introduced to minimise this danger. Therefore minima of flashing points have been given by law and methods of testing which serve to determine the inflammability of petroleum at certain temperatures, and under certain conditions.

We may mention here that the temperature at which the oil gives so much gas—that it, mixed with air, becomes inflammable without the oil itself beginning to burn—is called the Flashing point; the temperature, on the other hand, at which the oil itself begins to burn at its surface is called the Burning or Fire point. Uniformity of the laws, of the manner of examination and of apparatus, was, of course, not to be expected in the beginning. The existing confusion is also now only partially done away with, since England and Germany have adopted the same apparatus (that of Abel).

This fact, about which an International Conference would be desirable, has, as a result, that the minima of the flashing point fixed by the different countries of Europe and America can only approximately be compared. As far as this is possible, according to the experiments of Engler and Hass, those of the German Health Office, and the data in the Inflammable Liquids

Bill Memorandum, I have done so in the following table, in which the numbers are reduced to Abel test, since, as is known, this apparatus gives low numbers, and is most used:—

|                        |   |   |   |                                                                                                                                                                         |
|------------------------|---|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| England                | - | - | - | $73^{\circ}4'$ F. (Abel test).                                                                                                                                          |
| Germany                | - | - | - | $69^{\circ}8'$ " "                                                                                                                                                      |
| Norway                 | - | - | - | $71^{\circ}6'$ " "                                                                                                                                                      |
| Sweden                 | - | - | - | $104^{\circ}0'$ F. reduced temporarily to $96^{\circ}8'$ F.                                                                                                             |
| Denmark                | - | - | - | $104^{\circ}0'$ F. in the Danish apparatus = $+68^{\circ}0'$ F. (Abel).                                                                                                 |
| France                 | ) | - | - | { Burning point of $95^{\circ}0'$ F. indistinctly defined, probably $77^{\circ}0'$ F. to $86^{\circ}0'$ F. (Abel).                                                      |
| Belgium                | ) | - | - |                                                                                                                                                                         |
| Austria                | - | - | - | Burning point $100^{\circ}$ indistinctly defined.                                                                                                                       |
| Japan                  | - | - | - | Burning point $114^{\circ}8'$ F.                                                                                                                                        |
| Canada                 | - | - | - | $95^{\circ}$ F. (Abel); last year brought down to $86^{\circ}0'$ F.                                                                                                     |
| Many States of America | - | - | - | $100$ to $150^{\circ}$ F. Burning or flashing point, or $120^{\circ}$ F. in the apparatus Tagliabue. In several States almost or higher than $104^{\circ}0'$ F. (Abel). |

In France the law is very indefinite and insufficient. There the open Granier apparatus is used, which, like all open apparatus, gives few results which agree with each other. Petroleum is called there (*Decree, May, 1873*)—"Les substances moins inflammables qui n'émettent des vapeurs susceptibles de prendre feu au contact d'une allumette enflammée qu'à une température égale ou supérieure à  $95^{\circ}0'$  F."

In Austria, Japan, and different States of America, the laws are also indefinite and indistinct. The statement how the burning point in question is to be determined, and by what apparatus is, as far as I know, wanting altogether; and since, as is well known, the way of operating exercises an extraordinarily great influence, the mere statement of a minimum of the burning point has very little value. It is probable that in Austria and Japan the American way is followed. One sees that in the most States the flashing point is very low. It is a fact which cannot be contradicted that the flashing point and burning point of petroleum, as it is consumed in the most States of Europe, is so low that the temperatures of the oil in lamps and cooking apparatus lie above these degrees; in other words, that this oil when it comes in contact with a flame is ignited and burns on. A great number of special experiments has confirmed this. I come back to this later on. The great number of accidents which petroleum causes is explained by this.

Concerning this last point, it is necessary to take care against exaggeration and to state the facts correctly, especially in order to take away arguments from those in whose interest it lies to keep the flashing point as low as possible. If one remembers that the number of lamps and cooking apparatus which are lit every day amount to several tens of millions, and if one compares with it the number of accidents, it is beyond doubt that this number is relatively exceedingly small. But the actual number of these accidents, the material loss, and, in the first place, the loss of human life is, as shown in the following table, still very important—far too important to be simply ignored, or to be considered insignificant, although one might argue that a chance of an accident by petroleum is far smaller than that of an accident on the railway or on board a steamer. This would be only admissible if the authorities had done everything in their power to reduce the number of accidents to a minimum.

(To be continued.)



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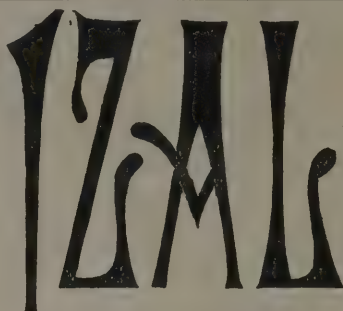
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## Food and Sanitation.

SATURDAY, JUNE 13TH, 1896.

### THE GREENING OF PEAS—AND OF THE PUBLIC.

In explaining how subjects have divers lustres and considerations, Montaigne wrote: "One nation considers a subject in one aspect and stops there, another takes it from another prospect. There is nothing of greater horror to be imagined than for a man to eat his father, and yet the people whose ancient custom it was to do so looked upon it as a testimony of piety and

natural affection, seeking thereby to give their progenitors the most worthy and honourable sepulture, storing up in themselves, and, as it were, in their own marrow the bodies and relics of their fathers, and in some sort regenerating them by transmutation into their living flesh by means of nourishment and digestion. It is easy to consider what a cruelty and abomination it must have appeared to be to men possessed and imbued with this superstition, to throw their fathers' remains to the corruption of the earth and the nourishment of beasts and worms." In further explaining his views Montaigne tells us that Lycurgus considered theft of great public usefulness, inasmuch as the vivacity, diligence, boldness, and dexterity of purloining anything from our neighbours causes each to look very zealously to the guarding of his own, and in fact makes every man his own watch-dog. A consideration of these reflections of the philosopher enables us to make allowances for the attitude of some members of the London Chamber of Commerce upon the question of the surreptitious introduction of poisons into foods. At a recent meeting of that body a Mr. Fischel said that these cases of prosecution might be termed raids upon the grocer. The present state of the law was most unsatisfactory, because while it did not prohibit the using of colouring matter, so long as the article was not made injurious to the consumers, there was no settled definition as to what amount the sulphate of copper could be added. One magistrate would convict a grocer for selling peas containing a certain percentage of copper, while another magistrate would allow perhaps a larger quantity. No trade could develop under such circumstances, nor was it a fair position in which to place the retailer. At present the law could not touch the wholesale trade, but, unless the question was settled, they might prosecute the manufacturer later on. What they desired was to try and find some means whereby they could get a fixed limit of copper allowed. They felt convinced that the use of the colouring matter was perfectly innocuous, because, in spite of the extent to which the trade had developed, it had never been proved that anyone had been made ill through eating the peas. The matter stood thus—the peas could not be coloured with any other substance than sulphate of copper, and the trade in England would not have them unless they were coloured, because the public would not buy them; and yet the retailer was liable to be summoned at any moment an inspector chose to go to his shop and purchase a tin, and a fine, or not would follow, according to the view of the individual magistrate who heard the case. The unfortunate part of the matter was that these raids were made at the season when the grocer would have the best chance of pushing the trade—when fresh vegetables were scarce.

Mr. Blackwell: What is the state of the law in France?

Mr. Fischel said that up to a few years ago there was a law which prohibited the greening, but as the result of a commission composed of eminent medical men, who fully enquired into the subject, the prohibition was withdrawn. It was a sort of understood arrangement that the quantity of copper used should not be a heavy one.

Mr. Copeman said he believed that in France they could use thirteen grains of sulphate of copper to a quart of water.

The Acting-Secretary then read the following letter which he had received from Messrs. A. W. Latham and Co.:—"Dear Sir,—The Delory Company, of Lorient, France, whom we represent in this country, and who are large packers of vegetables such as peas, beans, etc., and whom we have acquainted with the action and decision in reference to the pea case which recently occupied the court, have in their turn put the question for consideration, and further action, before the National Union of Commerce and Industry, who are a sort of protection society to the interests of packers of preserved food



in France. They informed the Delory Company that they would discuss the question at their next meeting, which took place last week, the result of which has, of course, not yet been communicated to the members of the society, but they have said this much—that they would communicate with the British authorities through the French Foreign Office, stating that French manufacturers do not wish to be judged or condemned through the faulty nature of preserved vegetables of other countries, which are perhaps not put up and prepared with the care they should be. In condemning the bad manufacture, the English judge laid special stress on the amount of copper employed in 'greening' the vegetables in that instance, but he raised no objection to the use of a moderate quantity of this colouring matter, and, fortified by their past enormous experience, the French manufacturers intend to make it known to the British consumer, through the medium of the English press, that they will pledge themselves responsible by continuing to prepare an article which, as hitherto, fulfils the requisite conditions, by a moderate use only of sulphate of copper, which is declared by the highest French scientific authorities as absolutely harmless."

Mr. Fischel pointed out that under the present law the retailer was fined for the first offence, while for the second he was liable to six months' imprisonment. How could the retailer know the exact percentage of copper contained in the peas he sold? It would always vary a little, for all the manufacturer could do was to fix the quantity of sulphate of copper that was put in the basin when the peas were coloured.

The Chairman remarked that it seemed to him that they required an Act of Parliament before they could get the question put upon a satisfactory footing.

Mr. Blackwell asked whether any evidence on the subject had been brought before the Food and Drugs Committee.

Mr. Fischell said he believed that the matter was only touched upon very slightly. He believed Mr. Rogers, of Travers', brought the question up and said that the peas were harmful, but he could not understand how that was, because it had been proved up to the hilt that they were harmless.

Mr. Blackwell said he was strongly of opinion that peas were better without copper, and we quite agree with him. We do not want the hireling testimony of supposed illustrious French scientific liars known as experts to form an opinion on this question. French trade required that its experts should report in favour of the harmlessness of copper in peas, and if Pasteur and Company had reported otherwise, France would have been too hot to hold those eminent scientists. France considers the cowardly and farcical duel a civilised means of settling a question of honour. Other people do not. The question of poisonous colouring-matter for peas may and ought to be looked at in a different light in this country. If it be right for the pea canner to drug his peas, how can we in justice object to the milkman, bacon seller, butcher, baker—in fact, every person who sells food, practising this insidious and surreptitious drugging upon us? We prefer to regard the question as one of principle, and in so regarding it, common sense and public safety both demand that such practices should be punishable. It is intolerable that we should be liable to be physicked without our knowledge or consent, and that article of food upon article of food should each convey its quota of poison to the unsuspecting consumer, whilst each offender thinks it sufficient justification for this amateur drugging to say that, like the servant girl's baby, "it is only a little one." It would be to the credit of the Preserved Food Section of the London Chamber of Commerce if it had more men of principle like Mr. Blackwell and fewer followers of the principle of Lysargus that thievery is of public benefit because it makes the public watchful.

## TINNED GOODS UNFIT FOR THE FOOD OF MAN, AND THE LONDON CHAMBER OF COMMERCE.

THE London Chamber of Commerce has been discussing the question of how tinned goods unfit for the food of man can be sold without risk to the vendors. The proceedings were private, but the Chamber apparently thinks that it is advisable that a clause should be inserted by the vendors in all sale or contract notes for doubtful goods that the goods included in the sale are not intended for the food of man; the object being, of course, that the rotten trash may be disposed of as heretofore, but that the wholesale vendors should escape the consequences of selling the filthy stuff.

Those favouring the full-flavoured rascality are perfectly well aware that the diseased, putrid food, be it rotten condensed milk, salmon, lobster, beef, or mutton, will get into the stomach of the long-suffering public, be it through the medium of pastry, sausages, or table delicacies, such as bloater paste, etc., just as it has hitherto done, but the insertion of such a clause, it is thought, may shield the wholesale rascal from prison or fine. No wonder the most reputable men in the food trade are seriously thinking that it is a disgrace to belong to the London Chamber of Commerce. The petroleum section has for long stank worse than the murderous article it lies for. In the opinion of many it is becoming clear that the best firms must soon wash their hands of the preserved food trade section. The Chamber, if it continues its late policy, will ere long find itself consisting of a secretary, a cheap dinner-hunting sir, notorious for combining exploitation of the Chamber of Commerce with quack Chamber of Commerce journalism, and unscrupulous vendors of diseased food. An ounce of fact is worth a ton of Chamber of Commerce scheming and lying, and a very excellent man unfortunately exemplifies this truth.

Mr. T. Ballan Stead, Permanent Secretary of the Ancient Order of Foresters, residing in Dundee during the past year, became seriously ill a few weeks ago. Several members of his family and a servant girl in his employment were similarly affected, and it was found that the illness was due to their having eaten tinned meat. Mr. Stead himself has since remained prostrate, and, as blood poisoning had supervened, he was removed to Dundee Royal Infirmary, where it was found necessary to amputate his left leg above the knee.

Mr. Stead's poisoning and amputation do not, however, affect the rotten tinned meat gang one jot. Adequate cooking of tinned food till absolute sterilisation be attained may cost some American millionaires a little more in wages bill and fuel, but the gang need not trouble themselves about the poisoning of Britishers so long as we have Liberals, Conservatives, and what not each looking to what job they can perpetrate to profit each other and plunder the public. Mr. T. Ballan Stead wrote many hundreds of articles for a widely-read Yorkshire journal. His energies and tact were given to the strenuous advocacy of the well-being of his fellow men. An American millionaire to save a few pence in wages and fuel can infect his household, poison him and lay him prostrate and cause him to be mutilated, and a section of the London Chamber of Commerce will hold a secret meeting to scheme how this sort of villainous poisoning can continue without their being punished. We don't belong to the Chamber, and our advice is, therefore, disinterested, and, unlike much of the Chamber's practice, is honest. We put it in a few words: Don't scheme how to sell diseased or poisonous food without risk of punishment. Send it to the refuse-destroyer in preference even to vending it to dog-biscuit factories. Such putrid filth is good for neither dogs nor men.



## SANITATION AS IT IS.

A FEW months ago a London vestryman complained that "Haricot Veins" were not included in the list of zymotic diseases. He also made some remarks about "tripod fever," and regretted as how a mate of his in the gasworks had died of "tubular disease." We fear this vestryman must have his relations in the majority on the Darlington Town Council when a proposal of such importance as that made by Dr. Manson at the last meeting of the Council could not even find a seconder. Dr. Manson, who is a town councillor, moved a resolution:—

"That as the annual report of the Medical Officer of Health shows that over one-third (53) of the total number (152) of deaths from zymotic diseases in the borough during 1895 were caused by 'phthisis and tuberculosis,' and as in his report for last quarter the deaths (13) from the same diseases are shown to exceed the total deaths (7) from all other zymotic diseases, it is therefore desirable that 'phthisis and tuberculosis' should be included in the list of those notifiable under the Act of 1889, and that they be so included on and after July 1st, 1896." It might be, he said, in the recollection of most members of the Council that four years ago he moved a resolution with reference to the diseases known as phthisis and tuberculosis. It was to the effect that as those diseases had a common origin they ought to be classified together in the returns furnished by the Medical Officer of Health of the borough. The matter was referred to the Sanitary Committee. Then they were informed that no change could be made in the form of the returns without the consent of the central authority. But if they referred to the annual report of the Medical Officer for 1895 they would find that he stated: "This year, as formerly, I have classified the deaths from tuberculosis *with* phthisis." He did not care to inquire at all as to how the impossible had been made possible. He was just content to know that what he advocated four years ago—and could not carry at that Council—was now fully recognised and acted upon as the proper system of registering those diseases. In what he was now advocating he was not in any way entering upon any disputed medical topic. That would not be the place for it. He was asking them as the Urban Sanitary Authority of Darlington to give their grave consideration to a statement of facts which were beyond dispute. He did not forget that he was speaking to laymen; but laymen who had in charge the sanitary interests of the town, and who were therefore more or less—more he hoped—familiar with such matters as he had to talk about. The main point to which he had to direct their attention was that phthisis and tuberculosis were as fully "zymotic" diseases as were scarlatina, diphtheria, or typhoid. In 1890 during the quarter ending December 31, they had an epidemic of enteric fever in the town. The Medical Officer's report for that quarter showed that 69 cases of enteric fever were reported in three months. They remembered the alarm there was. Well, the report showed that during those three months 12 deaths occurred from enteric fever. But curiously enough, during those same three months, exactly the same number of deaths occurred from phthisis and nobody was alarmed. The one disease which did not frighten anybody—infectious, slow, lingering in its miserable tortures—killed just as many as the more rapidly fatal typhoid. Again, the Medical Officer's report of last quarter said, "All the deaths from notifiable zymotic disease totalled up to 7, while those from non-notifiable phthisis and tuberculosis were 13." On what principle could they say that that one zymotic disease which actually caused most deaths should be the one which was not to be notified? He might remind the Council that, though all cases of zymotic disease under the Notification Act were obliged to be notified, not one of them could be compulsorily removed to hospital, so that removal to hospital was not the

only thing needful. There were two good results from notification: First, they knew the amount of preventible disease in the town; they caused the houses where it occurred to be visited and information of a sanitary nature distributed; and second, and most important of all, they tried their best to remove the causes of disease. In the case of typhoid in 1890, they sought out the possible first cause, and found it, it was said, in their polluted water supply, and in the case of phthisis, if his resolution were carried, it was only fair to point out that it meant a good deal more in the way of preventive measures than might at first sight appear. For it was a well-known fact that tubercular disease was not only communicable from man to man, but from the lower animals to man. The disease might come to man from eating the flesh of animals suffering from tubercle. How was that to be prevented? Clearly only by the inspection—preferably by a competent veterinary surgeon—of all the carcasses exposed for sale for food of man. That that was not done went without saying; and in that connection he might quote another sentence from the annual report of their Medical Officer—a very significant one—and which pointed to his favouring a scheme which he (the speaker) fruitlessly advocated there years ago. It said "The duty of inspecting frequently so many slaughter-houses is very onerous to the inspector and his staff, and I think the question of an abattoir for the borough is one that will come to the front for consideration in the near future." Then another means of spreading tubercle, and a very common one, was by using milk from a tuberculous cow. The milk might be up to whatever the Somerset House standard of purity may be—if anyone knew that—and still be full of deadly bacilli. The care of supervising the milk supply could also only be done by a skilled inspector. On both these points he again quoted the Medical Officer of Health, who in his report dated June 30, 1890, said: "Milk and meat used for human food should be pure and produced by animals free from disease." Whether they now passed his resolution or not it would come some day, and at all events he should have performed what he took to be almost a solemn duty incumbent on him as the only one of their colleagues whose professional training gave him some right to speak on the subject and to call their attention, as the sanitary authority of the town, to the desirability of endeavouring to prevent as far as might be a disease, the extent of whose ravages had not, he thought, hitherto been fully realised.—The motion received no seconder and therefore fell to the ground.

It is very curious that so many persons vitally interested in a town's welfare should not care one jot to know what causes sickness, higher rates, and misery that might be prevented. Dr. Manson could, we suspect, have gained the attention and support of his fellow councillors, and found a seconder to his proposition had it been an invitation to test Scotch whisky. We are not surprised to notice that later on the Mayor of Darlington regretted there were very few persons inclined to invest their money in large works in the borough. Darlington, Sunderland, and many other places need to realise the truth that no money is so wisely or remuneratively spent as that spent on sanitation.

## THE DANGERS OF EATING TINNED SALMON.

A YOUTH, who stated that his name was Maurice Hodgson, and that he lived at 10, Victoria-road, Darlington, was found lying on the causeway in Sun-bridge-road, Bradford, on June 2. He was suffering from severe pain, and said that he had been eating tinned salmon. He was taken into a house, and Mr. Lodge, the police surgeon, who was fetched, ordered his removal to the Workhouse.



## A LESSON IN FISHY PHILOSOPHY.

THE report of our fishery inspectors for 1895—which has just been presented to Parliament in the form of a handy Blue Book—may be regarded as generally favourable to the Northern rivers, says Joseph Cowen's paper. With respect to salmon, the yield is said to have been above the average; while trout, on the contrary, were extremely variable, being "good" on the Wear, "very fair" on the Coquet, "fair" on the Tees, and "poor" on the Tyne. Yet, if we take the latter stream first, the report would appear to be far from discouraging as a whole. There were no fewer than 22,418 salmon taken during the year, as well as 41,316 migratory trout, and the total weight of these catches amounted to more than 387,000 lbs. In view of these figures, it is somewhat surprising to learn that there is a steady deterioration of fish from pollutions. One naturally expects this sort of thing in great commercial rivers—especially where mines and chemical works abound. But, curiously enough, it is not the industrial undertakings that are blamed for causing most mischief on the Tyne. The poisoning is in reality attributed to the cleanly habits of dwellers in Newcastle and Gateshead, where the dread of illness has led to an extended use of disinfectants in house drains and sewers. Aided by the long drought, numbers of fish were also killed by impurities in the upper tidal waters, and their dead bodies could frequently be seen floating from that point to the sea. So far as the Wear is concerned, the returns go to show that 3,640 salmon and 1,680 migratory trout were taken during the season—the weight of the combined catches being 42,200 lbs. In this district the worst case of pollution arose from the workings of a colliery, but the proprietors are said to have made compensation by re-stocking the Browney, where the chief loss was experienced.

Though we have not detailed figures concerning the fishing on the Tees, there can be little doubt that the catch was in excess of previous years. This was not due to any diminution of sewage discharges into the river, because the notices to abate existing nuisances have not yet been acted upon. The betterment is attributed to misfortune rather than to improved sanitation, seeing that the greater abundance of fish is declared to be a direct consequence of decay in the lead mining industry. While the ore was being brought from below ground, the upper reaches of the Tees were constantly receiving deleterious liquids. Now that these operations have ceased in so many places, and miners have been driven to seek employment elsewhere, the outlook for sportsmen is gradually becoming more bright. From this fact we seem to get another illustration of the old proverb which says:—"It is an ill wind that blows good to nobody."

## POISONOUS CANNED TOMATOES.

"THE trade in canned or preserved goods," writes Mr. Albert Smith, M.I.C.S., "is now one of enormous magnitude, and the subject of the purity of them one of great importance to the public. I have been lately making analysis of various preserved fruits and vegetables, and find the tin canisters used for packing the goods are easily acted upon by the vegetable acids, with the result that large portions of the tin is dissolved, making a soluble salt of tin, which is very poisonous. Most of the books upon poisons do not refer to tin at all, but Professor Tidy, in his work, 'Forensic Medicine,' states that soluble tin is a very active and irritant poison, while Pereira declares that soluble tin acts topically as an astringent irritant and caustic poison, and when taken into the system produces convulsive movement of the muscles of the extremities and of the face, sickness, coldness, and death. From my experiments, I find that tin, like copper, is to some extent at least a cumulative poison. But we rarely consume

canned goods so continuously, or in such quantities as really to prove fatal, but yet such goods are more or less poisonous, and being poisonous, should be eaten with caution, or avoided altogether. The following experiments were tried upon guinea-pigs, showing the physiological action of soluble tin. A healthy guinea-pig was taken, and a small dose of soluble tin was mixed with its food. After a few hours, the solid excreta was analysed and tin found; two days after another small dose was given, when in a short time the animal appeared ill, and next morning was dead. The quantity of fæces passed since the first administration and the second dose was very small, and the size of the fæces had diminished to about that of a mouse. On making an analysis, the stomach was found nearly empty, the colon distended with food, and the small intestines empty; the liver, lungs, kidneys, and heart were examined, and all contained tin, the largest quantity being in the liver. Another guinea-pig was tried with the same result, except in the second case the bowels were filled with a semi-fluid, green offensive matter, containing a quantity of tin; in this case the liver contained a large portion of tin. The spasmodic twitching noticed by Pereira were also noticed in this instance. From the above experiments it clearly shows that tin is a most dangerous metal, and that some other method should be adopted to preserve fruit and vegetables other than in tins. The appearance of the bowels are not unlike those when children are said to have died from consumption of the bowels, and I have noticed that the mothers have said they have feed them on condensed milk, but I have not analysed any condensed milk so cannot say if it contains tin or not. I should think not."

## LOOKING AFTER KENSINGTON.

MRS. L. WHITE, a coffee-house keeper, was summoned last week, at the instance of Mr. Griggs, an inspector under the Sale of Food and Drugs Act, for selling an article, to wit, butter, which was not of the nature and substance demanded.—Defendant said the inspector came into her shop and had a roll, twopennyworth of butter, and a cup of coffee. She sold the butter as she received it, believing it to be pure.—Fined 10s. and 10s. 6d. costs.

Mary Rose Hamilton, also a coffee-house keeper, was summoned for a similar offence.—The Inspector in this case said the defendant had since shown him the bill showing that she paid butter price for the article. He believed she had been defrauded.—Fined 10s., and 10s. 6d. costs.

George Butler, also a coffee-house keeper, was also summoned.—The Inspector said this was not a case like the others, as the defendant had been a butter merchant for years.—Defendant: Well, I ain't a butter merchant now; am I? The sample was obtained by artifice and cajolery.—Fined 10s. and costs.

Thomas Price and James Payne, of 11, Boynton-terrace, Munster-road, were summoned for exposing for sale three pieces of mutton which were unfit for human food.—Inspector Griggs proved seizing the meat, which was condemned by a Justice of the Peace, and subsequently buried by witness.—The defendant Price said he had only been at Boynton-terrace for a fortnight, and had no cool-room. At the time of the inspector's visit a man was building an ice-house.—The Bench inflicted a fine of 20s. and costs.—In a second summons, where 47 lbs. of meat were put into brine, a fine of 40s. was imposed.

Thomas Arthur Stack, of Chelsea, was summoned for having on his premises nine faulty measures. Mr. Strugnell, an inspector under the County Council, proved seizing the measures.—Defendant said he had only been in the house for a fortnight, and that before the inspector's visit he had given an order for new pots. Fined 30s. and costs.



Frederick Gannaway, of Cale-street, Chelsea, was summoned for having on his premises ten measures that were faulty. Fined 40s. and costs.

John Schmerberger, 78, North-end-road, was summoned for selling bread other than by weight.—Defendant pleaded that the loaf sold was fancy bread, made of the best “whites.” Fined 10s. and costs.

Alfred Murrell King, executor to the late John Beardon, of 102, North-end-road, was summoned for a similar offence.—Defendant said the bread was made of the best flour that could be obtained; it went under a different system of fermentation, and was baked separately. Fined 10s. and costs.

#### DRUGGED MILK.

MR. SMETHAM, a North of England analyst, has called attention, in the *Journal of the Royal Lancashire Agricultural Society*, to the growing use of antiseptics for the preservation of milk, which he strongly denounces on the ground of injury caused to the health of young children and delicate adults by the habitual consumption of indefinite quantities of the drugs in question. It is quite time that serious attention should be given to this subject, as the abuse is carried on without check. It is even more commonly practised in relation to butter than in the case of milk, and is only less objectionable in respect of the former commodity because of the smaller quantity consumed at a meal.

#### POOR “MILK” AND POORER “BUTTER.”

WILLIAM MCSWEENEY, carrying on business at 112, Malden-road, Kentish Town, was summoned at Marylebone on June 5, at the instance of the St. Pancras Vestry, for selling milk from which 45 per cent. of cream had been abstracted, and also with selling butter which was adulterated by the admixture of foreign fats to the extent of 80 per cent.—Mr. Ricketts, Jun., solicitor, prosecuted for the Vestry. Evidence having been given it was urged in defence that there was illness in the house at the time.—Mr. Plowden said it was no thanks to the defendant that his customers were not ill too. This so-called butter was the most wretched stuff that could be imagined. The defendant had exposed himself to a very heavy penalty. He fined the prisoner 10s., with 12s. 6d. costs on the first summons, and 20s., and 12s. 6d. costs on the second.

#### MEAT: A SENSIBLE FINE.

HERBERT Copeland, butcher, of Gedling-street, Nottingham, was summoned at Clerkenwell Police Court, on June 6, for causing unsound meat to be deposited at 101, Charterhouse-street, West Smithfield, London, on May 16th.—The evidence of Mr. Bellings, sanitary inspector, was to the effect that on the day in question he saw eight pieces of beef, weighing 34cwt. 5lb., unpacked from a hamper that had arrived from West Hallam Station, near Nottingham. They were portions of two carcasses, and one of the animals had evidently suffered from tuberculosis. The other had either died, or been killed to prevent its dying a natural death from pleurisy. The meat was seized and condemned. Defendant, on being spoken to on the subject, declined to say anything about the meat or how it came into his possession.—A previous conviction for exposing unsound meat was proved.—Defendant was now fined £40.

#### THE TUBERCULOSED MEAT QUESTION.

THE butchers of that lovely little island “Man” have set an admirable example by unanimously agreeing not to purchase stock from any farmer or auctioneer in the Isle of Man unless such stock shall be guaranteed free from any infectious or contagious disease, and when slaughtered shall pass inspection by the Medical Officer of Health or Meat Inspector. In Edinburgh, at a recent meeting of butchers from all the principal towns of Scotland, a resolution was adopted to the effect that as a means of obtaining relief from the tuberculosis trouble, “the trade throughout the whole country should refuse to purchase live stock except upon a guarantee from the sellers.” We agree with our contemporary, the *Meat Trades' Journal*, that butchers, like other traders, have to realise the fact that platitudinarian pompous noodles of the Chaplin order don't care a straw for fairness to butchers or other traders. Their game is to line their own pockets, and divert public money into the coffers of their relations and their own class. They breed tuberculosed cattle, and swindle butchers into buying them. The butcher suffers the loss, but they pocket the money. The Isle of Man butchers have taken a step in the right direction. If similar resolutions were adopted in London, Liverpool, Manchester, Sheffield, Leeds, Wakefield, Newcastle, and other great centres, and acted upon, there would be no difficulty in securing a satisfactory settlement of the whole question.

#### “PUNCH'S” PUERILITIES.

*Apropos* of our remarks on the trade in old horses, *Punch* says:—

##### “THE HIGH-METTLED RACER.

“[It is said that 6,000 old horses have been imported into Belgium from England in one year, and afterwards killed and converted into tinned meat.]

“Eh? ‘The high-mettled racer is sold for the hounds?’

Nay, not whilst the Spirit of Commerce abounds!

He ran for the Derby, he crawled in a cab,

But not yet the horse-knacker his carcass shall nab;

Not yet shall the hounds or the pussy-cats part

His broken-down body, his plucky old heart.

Still money, if not Cups and Stakes, he may win,

The high-mettled racer is packed in tin.

A potted Bucephalus yet has his price;

The notion is new, though it hardly sounds nice.

He won lots of cash when, young, handsome and fleet,

And now he'll still turn in the ‘tin’—as tinned meat.

Not cat's-meat! Oh, no! Pack him up in a can,

And the horse, though no more, shall still nourish the man.

Despatch him to Belgium, when past all relief,

And the high-mettled racer returns—as tinned beef!”

We can assure *Punch* that it does not know what it is writing about. The high-mettled racer does not return here as tinned beef. It comes over as “Salami Wurst,” or “Deutsche Delicatessen.” Anyone but a *Punch* fool knows that tinned beef does not come from Belgium. We are losing our faith in *Punch* as a serious family journal.

#### THE SARSAPARILLA DELUSION.

THE *Medical Age* has the following remarks upon the nostrum whose use has been revived in the United Kingdom by lavish bribery of our newspapers:—“There is not a single tangible fact to show that sarsaparilla has any therapeutic properties whatever; no one has been able to show that the drug has produced any appreciable physiological effects. In spite of this fact, however, ‘sarsaparillas’ appear to be popular remedies. A recent analysis of goods of this class shows that they depend for their popularity chiefly upon iodide of potassium and a large content of alcohol, which latter often reaches a percentage of twenty-six or more.”



## RURAL SANITATION.

HINCKLEY Rural District Council met on June 8, when the Clerk read a letter from Mr. Lane, asking how it was they could not get a nuisance abated after it had been reported? The inspector told him he had no power in the matter. If other people caused a nuisance they had to abate it, but Mr. Joseph Carter could be allowed to do as he liked. On the 14th the writer had a very bad smell at his door, and a rotten horse was found in the pigstye, and two pigs eating it up, "shoe tops" in manure. The pigstye abutted on a foot-road where hundreds of people passed daily. The same thing occurred on the 24th; they could smell it in the front room; in fact it was daily, and he should like the Board to smell it on a hot day. (Laughter.) They had the measles in the yard, and no wonder. His nephew was just getting over diphtheria. Mr. Norton said they ought to make a surprise visit.—The Inspector said he had made a thorough examination, and found no trace of any carcass.—Mr. Norton: I have seen horses' legs there.—Mr. Howe: You have had three three "pop" visits during the past fortnight?—The Inspector: Yes.—Mr. W. Smith: There have been a lot of complaints.—Mr. Norton: It was in the newspaper after last Board-day, and he would take precautions to clear it up.—It was agreed to write and ask Mr. Lane to further substantiate his letter.

## THE SANITARY CONDITION OF ENGLISH WATERING PLACES.

A<sup>H</sup>ASTINGS town councillor is to move a resolution "That in the interest of the Borough as a health resort it is advisable that a more thorough and systematic inspection should be carried out in the Borough for the purpose of ascertaining and effectually dealing with nuisances and insanitary property in accordance with the recommendations submitted to the Sanitary Committee on behalf of the Local Government Board by their Medical Inspector, Dr. Bruce Low, in May, 1894,—and that the committee be instructed to report to the Council as early as practicable upon the best method of effectuating this object."

## MILK.

At Bradford, on June 2, Thomas Humble Sands, milk hawker, of 7, Belle Vue, Bradford, was fined £10 and costs for retailing skimmed milk adulterated with 20 per cent. of added water. The defendant was in the habit of fetching milk from the Midland Creamery, and the manager there detected the fact that on the 20th ult. defendant had in his can about three pints of water, to which the milk was added. He subsequently retailed the mixture to poor people.

At Wolverhampton, on June 8th, Robert Thomas Jones, farmer and licensed victualler, of the Three Tuns Inn, Stafford-road, Oxley, was summoned at the instance of Mr. H. Van Tromp, county inspector under the Food and Drugs Act, with selling milk with 20 per cent. of its original fat abstracted. The sample of milk which was taken was from a pint purchased for 1½d. at the back door of defendant's inn.—Mr. R. A. Willcock, who defended, said the defendant's daughter had inadvertently sold milk that was intended for household purposes.—A fine of 20s. and costs was imposed.

At Birmingham, on June 4, Edward Kemp, farmer, Bromsgrove, was summoned for supplying milk deficient 22 per cent. of natural fat. Mr. Hiley prosecuted, and Mr. M. Hooper defended. Defendant supplied milk to Messrs. Cattell Bros., New John-street West, and on the 4th May Police-sergeant Jones (Inspector of Food and Drugs) met the morning train by which it was conveyed to Birmingham. There were two churns from defendant, and samples were taken from them, one of which Dr. Hill found to be deficient to the extent of 22 per cent. The defence was a complete denial of any tampering with the milk during the time it was at the farm prior to its delivery to the railway company. Defendant had no object in extracting cream, as he did not make either butter or cheese, and why the one churn should be deficient and the other not when both were of the same milking he could not understand. Evidence was called

to support this contention. The Bench expressed the opinion that the case was not one of intentional fraud, but the defendant must accept the responsibility, and they imposed a fine of 20s. and costs. A similar point was raised in a case which followed, in which John Ball, Knightley House, Eccleshall, Staffordshire, was summoned for supplying milk containing 9 per cent. of water more than natural, and 13 per cent. of fat less than natural. In this case Mr. Hiley again prosecuted, and Mr. Thompson (Stafford) defended. The milk was supplied to the North Staffordshire Dairy Company, and on its arrival in Birmingham, on May 14, Inspector Jones took samples, one of which on analysis was found to be in the condition described. The defence was similar, but the Bench, while again exonerating the defendant from any attempt to defraud, held that he must accept responsibility, and imposed a fine of 20s. and costs.

## PURE LARD AGAIN—CURIOUS ARGUMENTS AT LLLANDAFF.

At the Llandaff Police Court, on June 1, before Colonel Woods, Mr. Phillip Turnbull, and Mr. E. David—Thomas Thomas, a grocer, of Taff's Well, was summoned by Inspector Roberts under the Food and Drugs Act for selling lard not of the nature demanded by the purchaser. Mr. T. J. Hughes, solicitor, of Bridgend, appeared for the defence, and admitted the purchase and also the certificate showing the lard to contain 16 per cent. of beef stearine. He cited the section of the Act wherein it was stated that the article must be pure, "except where any matter or ingredient not injurious to health, has been added, and is required for the production and preparation of the article in a fit state for commerce and consumption, and has not been added to conceal the inferior quality of the lard, or to fraudulently increase its bulk." Mr. Hughes maintained that beef stearine was not injurious to health; that it had been added and was required for solidifying the lard to make it saleable, and for the purpose of transit by rail and for storage in the shop; that it had not been added for fraudulently increasing its weight or measure; and that it had not been added to conceal its inferior quality. Pure lard, Mr. Hughes continued, would become rancid and could not be kept in a pure state at this season of the year unless there was some solidifying substance. Beef stearine was necessary for the purpose of solidification, and was not in any way inferior to pure lard, as its market price was exactly the same—in fact, was somewhat dearer. He would call Mr. Sankey, who would say that the lard was the best that was kept. Mr. Sankey, of the firm of Messrs. Sankey and Co., of Cardiff, said there was no such thing as pure lard known during the summer and hot weather, and that what was recognised as pure lard throughout the trade generally contained about 16 per cent. of beef stearine. The only time when actual pure lard was sold was at Christmas time. Beef stearine was of the same value as pure lard, namely, 22s. 6d. per cwt, and during the last two years had been even dearer.—Colonel Woods said the Bench were quite satisfied that there was no fraudulent intention, and they dismissed the case.—Mr. Hughes said he would have to ask for costs if these prosecutions were continued.—Mr. Evans (magistrates' clerk): You would have to ask the County Council for them.

## DANISH BUTTER AGAIN.

At Ryedale Petty Sessions, Sarah Elizabeth and Mary Ann Sunley, confectioners, Kirbymoorside, were summoned for selling ½lb. Danish butter not of the nature and quality demanded. The father of defendants was charged with the offence at the previous court, but he pleaded that he was not the proprietor of the shop, and the charge was dismissed. Mr. A. E. B. Soulby, solicitor, Malton, appeared for defendants, and raised a preliminary objection to the charge, although he added that he had a complete answer to it. He contended that proceedings ought to have been taken within a reasonable time, viz., within 28 days for test purposes, as butter was a perishable article within the meaning of the Act.—Mr. Lesley remarked that a mistake had been made by Inspector Newstead as to who conducted the shop.—Inspector Newstead said that Danish butter was not a perishable article, and did not come within the meaning of the Act; besides, the proceedings had been taken in strict conformity with the law.—Mr. Soulby said that the proceedings at that court were absolutely new proceedings, and however anxious the magistrates might be to have the case heard, they could not rule so to do.—The



Chairman: We are only desirous to do the right thing. The Inspector is anxious to have the summons put on a right footing, and the magistrates are of opinion that there are extenuating circumstances.—Mr. Soulbey said the magistrates had no power to extend the time for the hearing.—Inspector Newstead said that the butter was stated to be Danish butter, and in several cases had been decided as not perishable.—The Bench decided not to hear the case.

## FISH.

At Wednesbury, on June 2, William Ingram, Oak-road, West Bromwich, was charged with exposing for sale fish which were unfit for food.—On the 18th ult. Police-sergeant Williams met with the defendant in Church-street, hawking fish, and ascertained that he had in his cart 200 fish, mackerel and plaice, all putrid.—Alderman Williams reminded the defendant of the very serious consequences arising from the consumption of unsound fish, and told him that he was liable to penalties to the amount of £4,000—viz., £20 for each fish.—A fine of 40s. and costs was imposed.

## MEAT.

At Kensington Petty Sessions, Thomas Price, of 139, Marlborough-road, and John Pain, his manager, of 11, Boyton-terrace, Munster-road, Fulham, were summoned by the London County Council for having upon their premises, apparently exposed for sale, three breasts of mutton which were unsound and unfit for food.—Inspector Greig said that on the 19th ult., from information which he had received from persons who had taken back unsound meat to the shop, he went to 11, Boyton-terrace. He saw on a Board in the shop about 15 pieces of mutton, including the three pieces in question. The manager told him they were not exposed for sale, and that his employer had instructed him to send them away. He (the inspector) took the meat to a Justice of the Peace who ordered it to be destroyed.—For the defence, it was urged that the shop had only been opened a fortnight, and they were having an ice-safe fitted up. Defendants also maintained that the meat was not exposed for sale.—Fined 20s.—In regard to a second summons, of a similar description, a fine of 40s. was imposed.

## ADULTERATED SPIRITS.

At the West Riding Police Court, on June 2, William Heaps, of the Old Harrow Inn, Grenoside, was summoned for having sold on May 1 a quantity of whisky and gin which was not of proper legal strength.—Mr. Joseph Wilson, inspector of food and drugs under the West Riding County Council, said he purchased some whisky and gin at the defendant's house on May 1. He told him what he required them for, and offered to divide them. They were analysed by Mr. A. H. Allen, public analyst, whose certificates showed that the whisky contained 27 per cent, and the gin 34 per cent. more water than was allowed by the statute.—Defendant said the spirits had been in the kegs a long time, and must have lost strength.—Mr. Wilson said evaporation would not account for such a proportion of water.—Defendant said he would take care that the offence should not occur again, as he did not like whisky with too much water in it.—He was fined 5s. and costs in each case.

## WATER AT SPIRIT PRICE.

At Durham, on June 3rd, James Dawson was charged with having sold whisky which was 32.08 degrees under proof.—Benjamin Scott Elder, Chief Inspector of Weights and Measures for the county, said he purchased a pint of whisky at the defendant's public-house near Sacriston, and notified him that he intended to have it analysed. That having been done he received a certificate from the public analyst that the spirit was 32.08 under proof.—Mr. J. Mawson, who defended, said his client pleaded guilty, but said that the whisky was Scotch whisky, and until lately he had not sold any but Irish whisky, which he received eleven over proof, and he had expected the Scotch whisky was the same standard.—Mr. Elder pointed out that the defendant received the Irish whisky at eleven over proof, and the Scotch at proof, and this was a mistake on the defendant and the wholesale dealers. They, however, had no proof of Mr. Mawson's statement.—Mr. Mawson said no doubt the man was technically wrong, but he submitted he had only made an honest mistake.—Fined 10s. and costs.

## ENFORCING THE ACTS IN IRELAND.

At Abbeylax Petty Sessions (Queen's County) on 6th June, before Mr. Bruen, R.M., presiding, Acting-Sergeant Forbes, Inspector of Food and Drugs, prosecuted John Piggot, a farmer, for selling new milk to the contractors at Spink Creamery which was adulterated with at least 16 per cent. of added water, as shown by the certificate of Sir Chas. Cameron, Public Analyst. After hearing the inspector's evidence for the prosecution and that of defendant's son for the defence, the magistrates convicted—a previous conviction in April last having been proved. He was fined £2 10s. and costs.

The same complainant prosecuted Chas. Piggot for obstructing and refusing to supply him with a quantity of milk required by him, as inspector, for the purpose of analysis. The defendant pleaded guilty and was fined 5s. and costs.

The same complainant charged John Moore, a farmer's servant, with refusing to supply him with a sample of milk at Spink Creamery on 13th May last.—The defendant pleaded guilty and was fined 5s. and costs, the Chairman remarking that if any similar cases came before him he would inflict a very severe penalty.

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 275.)

Now, concerning the number of accidents, I should like to call attention to the following table. I owe this partly to the trouble of the President of the Congress, Mr. J. Meier, Commander of the Fire Brigade at Amsterdam, who has received information from the fire brigades in almost all the principal cities of Europe. The numbers marked thus (\*) have been published by Steuart on the occasion of a discussion about the Flashing Point of Mineral Oil in the Manchester Section of the Society of the Chemical Industry (*Journal*, 1893, 991), and are taken from the paper *Fire and Water* :—

|              |                   | Total number<br>of Fires. <sup>1</sup> | Caused by<br>Petroleum. |
|--------------|-------------------|----------------------------------------|-------------------------|
| Stockholm,   | 1893              | 281                                    | 34=12 per cent.         |
| Antwerp      | 1893              | 111                                    | 15=14 "                 |
| Breslau,     | 1893              | 248                                    | 26=10 "                 |
| Copenhagen,  | 1893              | 268                                    | 39=15 "                 |
| Leipsic,     | 1893              | 524                                    | 80=15 "                 |
| Bremen,      | 1893              | 278                                    | 35=13 "                 |
| *London,     | 1890              | 2555                                   | 271=10.5 "              |
| "            | 1891              | —                                      | 290                     |
| "            | 1892              | —                                      | 378                     |
| "            | 1893 <sup>2</sup> | 3410                                   | 456=13.5 "              |
| Cologne,     | 1893              | 266                                    | 17=7 "                  |
| Hull,        | 1893              | 181                                    | 20=11 "                 |
| *Paris,      | 1891              | 975                                    | 233=24 "                |
| "            | 1892              | 1070                                   | 256=24 "                |
| Hamburg,     | 1892              | 1522                                   | 158=10 "                |
| *Liverpool,  | 1891              | 565                                    | 58=10 "                 |
| *Birmingham, | 1891              | 382                                    | 24=6.5 "                |
| "            | 1892              | 388                                    | 31=8 "                  |
| *Berlin,     | 1891              | Total .. 4441                          |                         |
| "            |                   | Acute Fires, 1193                      | 373 <sup>3</sup>        |
| "            | 1892              | Total .. 5304                          |                         |
| "            |                   | Acute Fires, 1381                      | 505 <sup>4</sup> =9.5 " |
| *Chicago,    | 1892              | 3549                                   | 464=13 "                |
| *New York,   | 1891              | 3938                                   | 397=10 "                |
| *Glasgow,    | 1891              | 539                                    | 12=2 "                  |
| "            | 1892              | 591                                    | 7=1 "                   |
| *Edinburgh,  | 1891              | 315                                    | 12=4 "                  |
| "            | 1892              | 320                                    | 4=1 "                   |
| *Dublin,     | 1891              | 147                                    | 12=7 "                  |
| "            | 1892              | 114                                    | 6=5 "                   |
| "            | 1893              | 140                                    | 10=7 "                  |
| Amsterdam,   | 1893              | 1147                                   | 422=37 "                |
| "            | 1894 <sup>5</sup> | 999                                    | 306=31 "                |

<sup>1</sup> Those with unknown causes are included.

<sup>2</sup> Human lives in London, 48; in England about 300 per year.

<sup>3</sup> Only from lamps.

<sup>4</sup> From lamps and cooking apparatus.

<sup>5</sup> Human lives in Amsterdam, 7.

All these numbers, however, are yet far too low, on the one hand, because for a great number of small fires the fire brigade is not called out (in London, for



instance, many thousands). They are extinguished by the inhabitants themselves, and only the insurance offices are informed about them. On the other hand, the above table contains also fires from unknown causes, at any rate for the most cities, and it is evident that a great number of these fires belong to petroleum fires. This is evident through Table III., for which I have also to thank Mr. Meier. One sees that the number of accidents become still less favourable; for Amsterdam in the last 15 years it amounts from 37 to 47 per cent. :—

| Year. | Fire with known cause. | By Petroleum.    |
|-------|------------------------|------------------|
| 1880  | 488                    | 209=43 per cent. |
| 1881  | 495                    | 199=40 "         |
| 1882  | 503                    | 235=47 "         |
| 1883  | 571                    | 219=38 "         |
| 1884  | 599                    | 225=38 "         |
| 1885  | 666                    | 263=40 "         |
| 1886  | 851                    | 395=46 "         |
| 1887  | 797                    | 294=37 "         |
| 1888  | 753                    | 303=40 "         |
| 1889  | 700                    | 272=39 "         |
| 1890  | 761                    | 299=39 "         |
| 1891  | 721                    | 293=38 "         |
| 1892  | 924                    | 374=40 "         |
| 1893  | 956                    | 422=44 "         |
| 1894  | 756                    | 306=40 "         |

That Amsterdam takes the most unfavourable place among the great cities of Europe is caused, on the one hand, by the very extensive use of cooking apparatus (two-fifths of the fires come from that cause). On the other hand, from the fact that in Holland far more petroleum is used than in the other States of Europe, that is every year 26 kgs. per head; in Germany, 15; in England, 13.4; in Switzerland, 14.8; in Denmark, 13.9; in Scandinavia, 10 kgs. Only by Belgium is it excelled with 38 kgs. per head.<sup>1</sup>

Now, considering the number of fires not announced to the fire brigade, it would be very desirable that the insurance companies should give exact information. I can, in consequence of the kindness of the President of a Union of some Dutch insurance companies, give the following numbers :—

| Year. | Number of Petroleum Fires. | Amount of Damages. |
|-------|----------------------------|--------------------|
| 1889  | 664                        | About 64,000 M.    |
| 1890  | 704                        | " 108,000 "        |
| 1891  | 817                        | " 110,000 "        |
| 1892  | 1,125                      | " 149,000 "        |
| 1893  | 1,276                      | " 170,000 "        |

If we suppose that these numbers refer to  $\frac{1}{3}$ th of the population of Holland, which, as I am told, is rather too high than too low, that is to about 800,000 inhabitants, then it follows that for the whole of Europe every year the damage caused by fire must amount to a great many millions—probably 10 to 20 millions M. of mere waste of capital.

It is very much to be regretted that no statistics exist as far as I know, about the number of people killed and wounded by petroleum fires. All I could find about this is mentioned in Table No. II.

Since Spencer placed the number of killed, which in London alone are sacrificed every year to petroleum, as about 50, and for the whole of England as about 300, one can estimate the number of human lives, without exaggeration, to many hundreds per year. I think that the numbers in themselves are sufficiently plain, and that they, unless unsurmountable difficulties stand in the way, prove the necessity to take measures to protect ourselves energetically against the danger which is offered by the greater part of the petroleum consumed in Europe.

I shall at once treat the interesting history of the flashing point question in England and Germany: also, the relatively small number of accidents has played a rôle in the considerations, which have led to the fact that in these countries such a low flashing point has been kept until to-day. Yet attempts to raise the test in England have never been wanting. I shall also at once come back to the present movement in England, which endeavours to raise the flashing-

point to 100° F. Until now these attempts have been in vain. According to the opinion of some English authors (and as the history of the whole question proves), it is, in the first place, the manufacturers, the powerful petroleum companies of America; and now, especially the Standard Oil Trust, who work against every increase of the Flashing Point. About this resistance Carter Bell gives the following example: Professor Kedzie, of Michigan College, states that the people of Michigan demanded a test equal to 120° F. flash test in close cups. The oil companies in the States exerted a powerful influence in favour of a low test for the oil, but public safety withstood their efforts, and the tendency on the part of sanitarians and the people was towards a higher test.

The manufacturers wish the flashing point as low as possible. The lower it is the higher is the production of burning petroleum. For the more volatile products of petroleum there is not such a great demand. If the governments or municipal authorities do not take up the matter, or if they have the opinion that it is sufficient to lay some directions about lamp construction before the public, it is clear that the manufacturers will not trouble themselves about the great number of accidents, the loss of human life, and the material danger. Moral motives are certainly entirely unknown, at any rate in the American petroleum market and industry.

Now, concerning this material danger (not to speak at all about human life), it is most probable that it is considerably greater than the advantage which the manufacturers have from the 6 to 8 per cent. of the two volatile parts which alone are the cause of the great danger which the petroleum of 71.6 degrees F. to 75.2 degrees F. (Abel test) offers. I repeat it; it is a question only of 6 to 8 per cent. of the two volatile parts. This follows from the following considerations and experiments :—

A great number of observations and special experiments have proved that the danger which is caused by a certain petroleum is, of course not altogether, but almost done away with if its flashing point is about 104.0 degrees F. (Abel test), which agrees with a burning point of 122.0 degrees F. to 140.0 degrees F. Ordinary lamps and cooking apparatus, which contained this petroleum, when they are broken or upset do, in most cases, not ignite the upset paraffin, because the temperature of the oil is lower than its burning point. Special experiments with lamps, and the experience with the usage of a lighting oil with a higher test (kaiser oil, solar oil, astral oil, diamond saloon oil, eocen, universal oil, mineral sperm oil, etc., etc.—beautiful names for almost identical products—with flashing points of 100.4° F. to 120.0° F., Abel) in the upper classes have proved this. The same result is evidenced from some remarkable numbers of Table II. The fact that in Edinburgh and Glasgow the number of accidents amounts only to a few per cent. is caused by the fact that the petroleum, which is manufactured in Scotland itself out of Scottish oil, has a flashing point of 100.0° F. or higher.

#### THE COMPOSITION OF PETROLEUM.

Now, concerning the 6 to 8 per cent. of the volatile parts, the following experiments with petroleum of 71.6° F. to 73.4° F. (Abel test), as it is burned in Amsterdam (for instance, Standard Oil, No. 1), shows that this petroleum, freed of about 7 per cent. of its volatile parts, gives an oil with a flashing point of 104.0° F. (Abel test).

An oil of 73.4° F. (Abel test) fractionated in a flask of about the dimensions Engler mentions, has the following composition :—

|                |                         |                    |
|----------------|-------------------------|--------------------|
| Boiling point, | 230.0° F. to 302.0° F., | about 15 per cent. |
| "              | 302.2° F. to 527.0° F., | " 46 "             |
| "              | 527.0° F. to 688.0° F., | " 16 "             |
| Residue        | - - - - -               | 21 "               |
| Loss           | - - - - -               | 2 "                |

(To be continued.)



# YORKSHIRE RELISH.

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## CAUTION.

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**WILLIAM POWELL** (Trading as Goodall, Backhouse & Co.)

**v.**

**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

---

**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

65 & 66, Chancery Lane, London,

*Plaintiff's Solicitor.*



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It contains the entire nutritive and stimulative constituents of Prime Ox Beef, and differs from ordinary Bovril in being more concentrated and quite devoid of seasoning, solving the great difficulty which all medical men recognise of furnishing substantial nourishment to the system through a debilitated stomach, nature being so effectively assisted that perfect digestion and assimilation is certain.

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# Food & Sanitation

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## Food and Sanitation.

SATURDAY, JUNE 20TH, 1896.

### RAIDING TRADE MARKS.

TRADERS will note with satisfaction that another of the impudent attempts to appropriate other persons' property has failed. Eno's, Yorkshire Relish, and Bovril, amongst other world-wide known firms, have each been the target of persons who conceived that the law might allow them to sell their goods under the name or style of the goods of their competitors, and reap the benefit of their competitors' skill and money. It is astonishing that any persons could have the effrontery to go to the Appeal Court in such a cause, but they exist, and it is well that the judges so plainly show that they not only have no sympathy whatever with such attempts, but that they thoroughly realise the motives underlying the applications.

On June 11, Lords Justices Lindley, Lopes and Rigby heard the appeal of John Rosetree from the order of Mr. Justice Kekewich, dismissing a motion by the appellant for an order to rectify register of trade marks, under Section 90 of the Act of 1883, by expunging therefrom the trade mark No. 58,405, which consists of the word "Bovril." The mark was registered in November, 1886, and was now the property of the Bovril Company, they having acquired it in April, 1889. The mark was registered in Class 42 for substances used as food and as ingredients in food. The question for the Court was whether "Bovril" was a fancy word, not in common use, within the meaning of Section 64, subsection 1, Clause C, of the Act of 1883. On behalf of the appellant, it was urged that as the first syllable of the word—"Bov."—meant ox or beef, Bovril could not be said to be a fancy word. Mr. Justice Kekewich thought the word was not descriptive, as the respondents used it for celery, salt, and other articles; but, it was argued, if this contention were allowed to prevail, anyone might obtain a monopoly of the word "beef" by occasionally selling mutton, or for "sugar" by selling salt, and the like. Mr. Bower and Mr. Drew appeared for the appellant, who intended to start in business as a seller of extract of beef, and consequently claimed to be an aggrieved person within the meaning of the section. Mr. Moulton, Q.C. (with him Mr. Warmington, Q.C., and Mr. John Cutler), for the respondents, said the question whether "Bovril" was rightly on the register was one which must be decided at the moment it was put on. The Court had not to consider whether, in the progress of business, one article had, by its excellence, obtained a success which had won for the trade mark a kind of common interpretation. When Mr. Johnston first started the business he took "Bovril" as a fancy name. Lord Justice Lopes: If it meant extract of beef, why was it not descriptive? Mr. Moulton said the evidence was absolutely uncontradicted that this word had never been used before, and at the time it was chosen it conveyed no meaning. That being so, it could not be said to be descriptive. In support of his argument, the learned Counsel referred to a long series of authorities, including the Mazawattee trade mark case, and *Eno v. Dunn*. The hearing was continued on Friday, and at the conclusion of the arguments, Lord Justice Lindley said the result of acceding to the argument on behalf of the appellant would be to commit gross injustice. It was impossible to say that "Bovril" was not a fancy word at the time it was coined by the respondents in November, 1886. To a certain extent, the word might be said to be descriptive, as part of it had some relation to ox, but the word, as a whole, had never been previously used; in fact, it was coined by Mr. Johnston. Lord Justice Lopes, in concurring, said he had not much sympathy with the appellant, as the object was obviously to obtain a share of a business which had been built up at great expense by the Bovril Company. Appeal dismissed with costs.

### INFLUENCE OF BOTTLES ON THEIR CONTENTS.

EXPERIMENTS tried in Germany several years ago show that ordinary beer dissolves very slightly the glass of the bottle in which it is kept, and more careful measurements show that almost every liquid, even water, can dissolve glass in very small proportions. These facts, however, are not generally known, so that the following from the *Nat. Druggist* may cause surprise: "Probably ninety-nine persons out of every hundred, taken at random, would ridicule the idea that the quality of the glass of which a bottle may be made can have any influence on the taste or keeping qualities of its contents. And yet, that it does do so, we have the best of evidence. We are not alluding to the influence of light shining through the flasks and its action on the substance contained, but the direct chemical reaction occurring between the glass and the



material within the flask. Very recently the following case occurred in France. A wealthy retired merchant bought a lot of very costly and rare wine in casks, samples of the wine from each cask being given him by the wine merchant. The wine was delivered, and the new owner proceeded to have it bottled and racked off. Some time afterward some of the wine was brought to the table, and on tasting it the host detected a strange, unpleasant taste, which was also noticed by the guests. A fresh bottle was found to be similarly affected, and bottle after bottle was opened with the same result. An examination of the stock in the cellar developed the fact that every bottle of the recent purchase was spoiled. A suit was brought against the wine merchant, who declared that he had delivered the article exactly according to the samples furnished. On examining these latter they were found in excellent condition. It is unnecessary to go into details, but during the course of the action at law some of the bottles were produced in court, when it was found that the glass had become opaque. The bottles were handed over to a chemist, along with one of the lot purchased for bottling the wine, which had never been used. This is what the chemist found in the glass of the unused bottle:—

|                                 |     |     |      |
|---------------------------------|-----|-----|------|
| Silicic acid...                 | ... | ... | 52.4 |
| Potash and soda                 | ... | ... | 4.4  |
| Lime                            | ... | ... | 32.1 |
| Argillaceous matter, iron, etc. | ... | ... | 11.1 |

"In the examination of the bottles that had been used, while the silicic acid and argillaceous material remained constant, or nearly so, the lime, potash and soda were very much diminished, and it was made evident that they had passed into solution, forming compounds with the acid ingredients of the wine, decomposing the latter and rendering it unfit to drink. There is now a suit pending against the maker of the bottles."

#### THE MINERAL OIL ENQUIRY.

THE American oil gang, having "nobbled" the mineral oil section of the Chamber of Commerce, apparently believe that they can hocus or nobble our House of Commons, for they are making frantic efforts to delude the House of Commons Committee. It is in every way unfortunate that such a person as Mr. Mundella should have been made Chairman of the Committee, as times over his incapacity for the work is so manifest as to evoke mingled pity and contempt from those who understand the question and the influences operating on behalf of the American professors of arson and murder who have such a tremendous interest in deceiving the Select Committee. At present it looks as though this Committee will be as big a farce as the one of a few years ago on Spirits. It is, however, getting a little true evidence.

Dr. Stevenson Macadam, professor of chemistry in Edinburgh, gave evidence before Mr. Mundella's Committee on Petroleum, and expressed a strong opinion that no oil used for illuminating purposes could be considered safe which had a lower flash-point than 100° Fahrenheit close test. He would not, indeed, prohibit the sale of oil with a lower flash-point, but he would insist upon its being labelled, so that the public who used it should know that they were dealing with an oil which was attended with danger. He mentioned that by abstracting 10 per cent. of the spirit from the American oil it could be brought up to the flash-point which he recommended without any difficulty, and that the cost of this process would not amount to more than ½d. per gallon. On the question of the danger from lamps, the witness differed from previous witnesses like Lord Kelvin in that he preferred a strong glass to a metal reservoir, because experiments which he had conducted showed that the metal reservoir raised the temperature of the oil considerably more. He had never known any accidents take place from the vapour

thrown off by Scotch oil. The chairman pointed out that in France and Germany oil was sold at 70° flash-point, and there were comparatively few accidents. Dr. Stevenson Macadam said he would still insist upon the 100°, and that if there were fewer accidents in those countries it was probably due to the higher intelligence of the people. Mr. Alex Cross, a Scotch member of the committee, remarked that he was sorry to hear such a statement from a countryman of his own. The Chairman: You may be sorry, but I am afraid the statement is only too true. The committee adjourned.

Professor Mendeleef (who was present at the request of the Russian Government) gave evidence. He said the open flash-point in Russia was about 200° Fahrenheit. The lamps used to burn this oil cost between 5s. and 6s. each, because the common lamps could not burn it in consequence of its bad smell. Experimenting to demonstrate the safety of this oil, Mr. Cumber lighted a pile of wood with ordinary petroleum oil, and by pouring on it six or seven gallons of the high-flash oil, the fire was extinguished, showing that oil at that high-flash point was as innocuous as water. The lesser number of accidents in England than in Germany arose, in his opinion, from the fact that the people were more careful, although the flash-point was lower and they burned a more dangerous oil. Continuing, witness said the shale oil made in Scotland was always of the same standard, whilst Russian and American petroleum was always changing from year to year. The supply of petroleum in Russia was increasing, and the wells were filling up more and more every year. Referring to the number of accidents in Russia, the Professor attributed the small number in Russia to the high flash-point of the oil. In reply to Mr. Jesse Collings, witness said he had no statistics to prove that they were fewer in Russia than in England.—Mr. Jesse Collings: Then we may take it that all comparisons are mere guess-work? Witness said he had not a tabular statement to prove it, but he had formed the impression from reading both the English and Russian newspapers which recorded accidents.

As to evidence in favour of the 73° flash-point, it is such obvious "expert" lying that it ought not to even weigh with Mr. Mundella.

#### STANDARD v. SCOTCH OIL COMPANY.

BALLARD SMITH, an American press correspondent in London, sent out a report, says the *Paint, Oil and Drug Review*, which throws some side-lights on British Parliamentary methods as well as outlines, perhaps vaguely, the position of the Standard and Scotch Oil companies in Great Britain. Mr. Smith says:—

"The Standard Oil Company, of the United States, was prominently concerned in an extraordinary scene at a private sitting of a Parliamentary Select Committee appointed to inquire into the advisability of raising the flash point of mineral oils sold in the United Kingdom.

"Anthony J. Mundella, M.P., who had to retire from the position of President of the Board of Trade in the last Liberal Government because of his connection with unfortunate joint stock enterprises, is the chairman of the committee. He brought forward as a breach of Parliamentary privilege the accusation made in *The Scotsman*, the leading Scottish paper, that he was conducting an inquiry in the interests of the American oil producers. Mr. Mundella indignantly denied the charge, and precipitated a heated controversy by accusing one of the Scottish members of the committee of having inspired the libel. An altercation, lasting nearly an hour, ensued, but—though the statement in the newspaper was clearly a breach of privilege punishable by severe penalties, as it involved a charge of complicity in gross corruption—it was ultimately decided to take no action."



## CHAMPAGNE AND GOUT.

SWEET champagne is acquitted by Dr. Harley of the responsibility for gout. Sugar is an indispensable element in the production of champagne from its birth to its maturity. But the idea that sugar causes gout is scouted by Dr. Harley. Far sweeter champagne is drunk on the Continent than in England. Nevertheless gout is a more common disease in this country than in any other. Dr. Vaughan Harley, while working at the Sorbonne in Paris, took thirteen ounces of sugar daily until he completely upset his digestion, and totally failed to induce the disease, although he is hereditarily gouty. Probably, says Dr. Harley, the first person who said that sugar caused gout was a crusty old gentleman, fond of strongly spirituous wines, anxious to find an excuse for drinking them instead of the less alcoholic, sweeter young ones. The most alcoholic and acid ones are the chief generators of gout.

## MILK.

At Exeter, on June 12, Richard John Newberry, farmer, of Marsh Barton, Alphington, was summoned for selling milk from which a portion of fat had been removed, on May 29. Mr. G. R. Shorto, town clerk, prosecuted. Mr. Wreford, inspector under the Food and Drugs Act, said that on the morning of May 29, at five minutes to eight, he saw the defendant's son selling raw milk in North-street. He told him he required a pint of the milk. He was supplied with it, and paid 2d. The milk was divided into three parts—one given to defendant's son, another sent to the public analyst, and the third he retained. The analyst had reported that the milk was .72 deficient of fat. He asked the defendant's son if any fat had been abstracted from the milk, and he replied "No." There was no suggestion that any water had been added to the milk. Cross-examined by Mr. Orchard, who defended: The dryness of the weather would not reduce the quantity of fat in milk. He took several samples of milk from different dairymen, but none were as low as regards analysis as that bought of the defendant. For the defence, Mary Ann Nott said she received the milk from the various persons who milked the cows on the morning of May 29. It was immediately passed through a strainer into cans and sent to Exeter. Nothing whatever was done to the milk except the passing of it through the strainer. No overnight milk was added to that sent out for sale on the morning of the 29th. There had been several analyses of the milk from Mr. Newberry's cows, and always before this found to be very rich in cream. She was at a loss to understand the deficiency in this instance. The defendant had nothing to do with the milk on the morning of the 29th. George Newberry, son of the defendant, corroborated, and said he had been selling milk an hour and a-half before Mr. Wreford saw him. Mr. Orchard said defendant denied that a particle of fat was removed. The deficiency was owing to the dry season. There was a previous conviction against defendant for selling adulterated milk. The Magistrates said it was necessary to protect the public. Defendant would be fined £3 and expenses.

JOHN COCKRAM, of the Rosebarn Dairy, Pennsylvania, was summoned for selling adulterated milk in Exeter on May 27. —Mr. Shorto prosecuted, and Mr. W. L. Brown defended.—The Town Clerk said the milk sold by the defendant on the day in question had 8 per cent. added water. He hoped their Worships would inflict a heavy penalty to put a stop to adulteration.—Mr. Wreford deposed to seeing the defendant's son delivering milk in Longbrook-street on the afternoon of May 27. He purchased a pint of milk, and paid 2d. for it. He sent a portion to the analyst, who certified that it contained 8 per cent. of added water.—Mr. Brown said the magistrates had dismissed cases of 7 per cent. added water. The milk, except for the added water, was very rich.—The defendant's wife deposed to milking the cows on the afternoon in question. The milk was sent away perfectly pure, and no water was added. On May 27 her husband was away from home the whole of the day.—Cross-examined: The only reason she could give for so much water being in the milk was that the cows were given grains.—Mr. Cockram said one of the cows of the dairy was fat and had been fed on grains. This animal's milk would be very poor. There were ten cows which were milked. He bought the best of cattle he could get for money.—The magistrates imposed a fine of 10s. and expenses.

At Cheshunt, on June 10, George Dewbury, of Mill-lane, Cheshunt, was summoned for selling milk containing 10 per

cent of added water on May 4th.—Inspector Johnson produced the certificate of the public analyst, Mr. A. E. Ekins, St. Albans, which showed that the sample submitted contained 10 per cent. added water.—Defendant who had been previously convicted, was fined 21s. and 9s. 6d. costs, 10s. 6d. analyst's fee, and 3s. per witness. The money was paid.

JAMES BAILEY, baker and dairyman, of Windmill-street, Cheshunt, was summoned for selling milk devoid of 45 per cent. of fat.—Fined 5s. and costs, and ordered to pay 10s. 6d. analyst's fee.

THOMAS HAZLEDEAN, of Turner's Hill, Cheshunt, was summoned for selling milk deficient of 60 per cent. of fat. The case was dismissed on defendant paying costs, the analyst's fee, and for one witness.

The cases were supported by Mr. Thomas Johnson, inspector under the Act.

At Bristol, on June 15, Susan Davie was summoned under the provisions of the Food and Drugs Act for selling milk to Inspector Beer which was not of the nature, substance, and quality of the article demanded, it being alleged that the milk contained 5 per cent. of added water. Mr. Wansbrough appeared for Miss Davie, who, he said, had been in business in the same place for 20 years, and had never had the slightest accusation made against her. She had purchased the milk from Mr. Richmond Harding, of Long Ashton, a gentleman well known for his integrity, and he and Mr. Wansbrough were prepared to call as witnesses the person who milked the cow, the man who delivered the milk, and Miss Davie, who received it and sold it to the inspector, and they would all say upon their oaths that no addition of any sort had been made to the milk since it came from the cow. Under these circumstances he asked their Worships that the remaining sample, which was in the hands of the police, should be sent to Somerset House authorities for analysis. Their Worships complied with this request, and the case was adjourned *sine die* to see what the result of the analysis at Somerset House would be.

At North London, on June 15, Mary Ann Banfield, of West-street, Hackney, appeared to an adjourned summons, which alleged that she had sold milk adulterated with six per cent. of water. The defendant produced a warranty from a Mr. Davis to supply her with pure milk; but Mr. Tiddeman, who prosecuted for the Hackney Vestry, submitted that this warranty could not be traced to this particular sample, as there was only defendant's word to show that the bulk of the milk came from Mr. Davis. The moral was to get a warranty with every delivery.—Ordered to pay 12s. 6d. costs.

At Westminster last week, Samuel Johnson, 56, Stewart's-road, Battersea, was summoned by the St. George's Vestry for selling milk alleged to have been adulterated with 18.8 per cent. of water, on May 14, at Hanover-street, Pimlico.—Mr. Hitchins, jun., appeared on behalf of the Vestry in support of the summons.—Inspector Aris said he met the defendant in the street with a barrow. He said he had no new milk, but that it was all "separated." Witness bought a sample and divided it into three parts, defendant accepting a division. The certificate of the public analyst stated that the milk contained 18.8 of water.—Defendant said he purchased the milk as separated and he sold it as he received it.—The Clerk: Have you any warranty?—Defendant: No, sir.—Mr. de Rutzen inflicted a fine of 40s. and 12s. 6d. costs.

At Chertsey, last week, William Webb, a dairyman, of Guildford-street, Chertsey, was summoned for selling new milk from which 15 per cent. of natural fat had been extracted, on May 15.—A boy, named Bullard, deposed that on the day in question he bought a pint of new milk for 1½d. from defendant's cart at Addlestone.—Mr. F. Cliffe, one of the county inspectors under the Food and Drugs Act, said he sent a portion of the milk purchased by Bullard to the public analyst, who certified that there was a deficiency of 15 per cent. in natural fat.—Defendant asked Mr. Cliffe to make it plain that he was not charged with adulterating the milk with water.—Mr. Cliffe replied that the charge was not one of adulteration.—Defendant was then sworn, and stated that the milk was placed in his cart at the station and sold without ever going on to his premises. The can from which Bullard had the milk was a 17-gallon one, and, as there were only three pints in it when the sample was taken, the test was not a fair one, especially as the milk had been in the cart for seven hours.—The magistrates inflicted a fine of 10s., including costs.—The defendant in this case, it should be stated, is not the ex-chairman of the Chertsey Urban District Council, who bears the same name.



At Bath last week, George William Dunn, of Prior Park Dairy, Sussex-place, was summoned for selling adulterated milk to Henry Graham Montagu, on the 26th ult. Mr. Moger appeared on behalf of the Urban Sanitary Authority. Inspector Montagu proved purchasing a pint of new milk at defendant's shop, which he divided in the usual way. Mr. Gatehouse, the city analyst, said he received a sealed sample of milk from the last witness, analysed it, and found that 33 per cent. of the natural fat of the milk had been extracted, and 5 per cent. of water added. The defendant said he received 12 gallons of milk that morning from a farmer. Seven gallons were sent away directly, and five were kept for the shop.—The Bench imposed a fine of 20s. and costs, or 14 days.

At Birmingham, on June 11, William Ward Randles, farmer, Stafford, was summoned for selling milk 34 per cent. deficient in natural fat. Mr. Hiley prosecuted, and Mr. Dorset defended. The milk was consigned to Messrs. Cattell Brothers, New John Street West, Birmingham, who were regularly supplied by the defendant, the latter guaranteeing the purity of the milk. An officer intercepted the milk at the station, and analysis showed it to be deficient in cream to the extent indicated. Mr. Dorsett urged that some mistake must have been made, and called the defendant, who said the milk was dispatched in the usual way, and was new milk from which none of the cream had been abstracted. The dry season, which had taken all the nature out of the grass, might have affected the quality of the milk. The Bench said they must hold defendant responsible for the deficiency, and he would be fined £5 and costs.

At Belfast, on June 9, Wm. Fraser, dairyman, Ballygomartin, was summoned by David M'Master, under the Food and Drugs Act, for having sold sweet milk adulterated with 24 per cent. of added water.—Mr. Lewis prosecuted, and Mr. Kerr defended.—The complainant said that on the morning of the 5th inst. he stopped the defendant's milk cart and purchased from the driver, Wm. James M'Cullough, two pints of sweet milk—one pint from each large can—for which he paid threepence. He told M'Cullough he was an inspector, and had made the purchase for the purpose of analysis.—Mr. Kerr said his client did not appear, but had instructed him to plead guilty to the offence. He was not at home when the cart left on the morning in question, and knew nothing of the occurrence. He would take particular care that such a thing did not take place again.—Mr. Lewis said he was instructed to press for a heavy penalty, as this was not defendant's first offence.—The Magistrates imposed a fine of £5 and costs.

At Liverpool on June 10, Simon Lambert, milk dealer, Hampson-street, was fined 20s. and costs for selling skim milk which, on analysis, was found to contain six parts of water to every hundred parts of the poorest milk.—A similar penalty was imposed in the case of Thomas Scarr and Son, milk dealers, Marlborough-road. In this case ten parts of water had been added to every hundred parts of the poorest milk.—Nicholas Harrison, milk dealer, Dorset-road, Tuebrook, was summoned for selling new milk which had been deprived of one-fourth of its cream. The defendant said that he got a load of hay, and it did not answer the purpose. Mr. Stewart: This is the first time I ever heard that a load of hay would skim milk (laughter). Mr. Pierce, who prosecuted, said that the defendant meant that the hay was poor, and did not lead to a yield of good milk. Mr. Stewart: I understand what he meant, but he did not express it. Defendant said that he had sent the hay back. A fine was imposed of 20s. and costs.

At North London, on June 10, the following summonses were taken out by the Hackney Vestry, and supported by Inspector Punter:—George Johnson, of Sheep-lane, for selling as milk an article from which the analyst reported that 12 per cent. of the original fat had been abstracted. The defendant pleaded guilty, but added that he sold it as he bought it. He could have detected it had there been water; but his tester did not tell of abstracted fat. Mr. Bros told the defendant that if he followed the trade of a milkman he must protect himself by a written warranty. Fined 10s. 6d., and 2s. costs.—Mary Banfield, of West-street, Hackney, was summoned for selling milk adulterated with 6 per cent. of added water. This defendant declared that she sold the milk as she bought it, and produced a written guarantee from the wholesale dealer that her supplies should be genuine. She had purchased of the same man since he wrote this document three years ago. The case was adjourned until Saturday for further evidence.

### THE CERTIFICATE QUESTION AGAIN.

At West Ham, on June 15, Albert Clarke, of 53, Martin-street, Stratford, was summoned, before Mr. Baggallay, for selling milk alleged to be adulterated with eight per cent. of added water.—Mr. Rendall Moore, who defended, raised the novel point that the analyst's certificate was bad, as it did not state each constituent part of the article, and because it contained an observation which ought not to be on it. It had been held that they were entitled to have all the constituent parts of the sample set out in detail. This was for the purpose of enabling the magistrate to say to what extent the milk had been adulterated.—Mr. Baggallay pointed out that the certificate did not say how much water the article contained—it only showed how much had been added. The opinion of the analysis was an opinion on fact, and it seemed to him that the strongest objection to be raised to the certificate was that it did not even state the quantity of water.—Dr. Sanders (the medical officer of health) said practically it did. The analyst was required to say the parts he found in this substance, and he found milk and water—milk 92 per cent. and added water 8 per cent. Then he had added, for the magistrate's information, the reasons for stating the parts, and he had given the particular standard that was generally received—that milk should contain 8·5 per cent. of non-fatty solids, whereas this sample contained only 7·82 per cent. If the analyst were to give all the constituent parts the question would arise where was he to stop? He would have to give the amount of carbon, hydrogen, and oxygen, in fact, a list of the elements and nothing else. He (Dr. Sanders) submitted that there were sufficient data there without going into further details, and added that the certificate was the same as the certificate adopted by the Society of Analysts.—Mr. Baggallay said the question how much was milk and how much added water was merely an opinion on the result of the analysis. The analyst had to analyse; he had to give the result of his analysis, and then the opinion based on the result. Here the analyst had given so much water and so much milk, as merely an opinion on the result of his analysis. To his mind the certificate omitted to state an important thing—how much water was there in the milk.—Dr. Sanders asked for an adjournment to get legal aid, and an adjournment was granted.

### SOUTH DUBLIN UNION MILK.

THE Workhouse Master reported that he took samples of milk from the contractors to the workhouse, and handed them to Sir Charles Cameron for analysis. That morning he received the following letter from Sir Charles Cameron:—"Dear Mr. Fraser,—The milk samples No. 3, 4, and 8 are largely adulterated with water and starchy matter. It would be well if you made a special report of this to the board. This is a scandalous and unusual adulteration." The Master further reported that No. 3 sample was from the milk supplied by John Kinsella, 70 Pill-lane; No. 4 sample from Margaret Cullen, 36, North King-street, and No. 8 sample from John Kavanagh, 14, Pill-lane.—Mr. Deane: I met Sir Charles Cameron to-day, and he told me these were the worst cases of adulteration ever submitted by this board to him. Is it possible for the starch to rise in the samples?—Mr. Mooney: The starch takes the place of the cream.—Mr. Deane: I think this adulteration has been very generally the practice here, because I have observed in some of the samples here that what is apparently cream is pure white.—The Master: I can't help that; all I can do is to draw attention to these matters.—Mr. Mooney: I suggest that the master be empowered to prosecute in these cases, if Sir Charles Cameron certifies adulteration.—Mr. Lenehan: I would not prosecute the dairyman at all, but I would prosecute every guardian here, yourself included, Mr. Chairman (laughter), for the guardians are not giving a proper price for the milk, and they are encouraging adulteration.—The Chairman: This is the usual harangue we get from you every time the milk question turns up.—The Master's report was approved of by the board, and he was ordered to prosecute.

### ADULTERATED MILK IN DUNDEE.

At a meeting of the Sanitary Committee of Dundee Town Council, on June 9, a certificate from the City Analyst was submitted to the effect that a sample of milk sent to him for examination had been found to be adulterated by 11·77 per cent. of water, and that while normal milk contained 8·5 per cent. of non-fatty solids, the quantity referred to contained 7·50. It was agreed to



forward the certificate to the Procurator-Fiscal, with a view to a prosecution being instituted. In his report for the quarter ended 15th May, the analyst stated that in all 116 samples had been examined by him, and that in the majority of cases the milk was discovered to be genuine.

### MEAT.

At Clerkenwell, on June 15th, Thomas Gust, a butcher, carrying on business at Bringett, Kent, was summoned by Mr. George Timothy Billings, sanitary inspector of the Holborn District Board of Works, for causing to be deposited at 91, Cowcross street, West Smithfield, the carcasses of three lambs which were unsound and unfit for human food. Mr. Matthew Hale, solicitor to the Holborn District Board of Works, who appeared on behalf of the prosecution, stated that the defendant was in a large way of business, and in the habit of sending meat to salesmen inside and outside the Central Meat Market. On the 14th ult., defendant sent the parcel containing the unsound meat to 91, Cowcross-street. The carcasses only weighed 14lbs. to 22lbs. each, proving the animals had suffered from some wasting disease, believed to be kidney disease. The defendant said that he sent the meat up, but had no idea it was diseased. Mr. Horace Smith said that anyone who saw the meat could not have any doubt about it being bad. The defendant would have to pay a fine of £15. The defendant at once paid the money.

At St. Helens, on June 15, two meat hawkers named James Bromskill and Robert Bromskill, of 24, Traverse-street, St. Helens, were summoned for depositing for sale unwholesome meat. The Town Clerk (Mr. W. J. Jeeves) prosecuted, and Mr. H. L. Riley defended. The case for the prosecution was that Meat-inspector Smirthwaite visited a milk and provision shop in Traverse-street, kept by Mrs. Bromskill, and in a cellar there found two pieces of unsound meat hanging on nails, and weighing altogether 12lb. The floor of the cellar was covered with mud and water, and the place was horribly filthy. Both defendants asserted to the officer that the meat he saw was not intended for food.—Mr. Riley contended that the Bench could not from the evidence draw the inference that this meat was for sale.—The Magistrates considered there was a doubt and dismissed the case.

At Exeter, on June 13, Frederick Cosway, butcher, of Bampford Speke, was summoned for having in his possession, for sale at the Lower Market, meat unwholesome and unfit for food. Mr. G. R. Shorto prosecuted, Mr. J. Beal defended.—Thomas Dymond, labourer, said on Saturday evening he saw defendant take pieces of meat from a basket to replenish his stall. The meat smelt badly. Seeing Cosway sell several pieces of the putrid meat he gave information to the police.—By Mr. Beal: Mr. Cosway had not charged him with stealing a piece of beef on Saturday night.—Selina Tucker said her husband purchased two pounds of beef from Mr. Cosway. She told him the meat was not fresh. He called her a liar, using an oath, and he was ejected from the market. The following day the meat was so bad they could not eat it.—William Tucker said the meat seemed to him to be all right when he bought it, but it ought to have been buried a week before he purchased it. It was so bad that it spoilt the potatoes and the pudding, and his wife and himself had to go without their dinner.—Mr. Wreford, sanitary inspector, said in a basket under the stall he found nine pieces of putrid meat. It was stinking and rotten, and some pieces contained bunches of maggots as big as one's fist. It was condemned by the medical officer and destroyed.—Mr. Beal said undoubtedly the meat was unwholesome, but it was not exposed for sale. There were several witnesses who would prove this.—The case was adjourned for their attendance.—On the hearing being resumed in the afternoon Christopher Hawkins, butcher, St. Thomas, said when defendant arrived at the market he noticed that pieces of his meat were green, and he advised him to send them away, which he said he would do when he had time. They were placed in a basket and put under the stall, and not exposed for sale.—George Jewell, defendant's assistant, said he did not see any meat sold from the basket. He was told to give the bad meat to the dogs, but forgot all about it.—L. Jennings, cattle drover, said all the meat offered for sale by defendant on Saturday night was good. No meat was taken from the basket under the stall and sold.—Defendant was fined £3 and costs.

At Clerkenwell, on June 13, John Archer, of Scropton,

Derby, was summoned before Mr. Kennedy for depositing for sale, on the 19th February, at Link's shop, 2 and 3, Cowcross-street, St. Sepulchre, three quarters of beef, intended for human consumption, which were unsound. A second summons against the defendant was for depositing at the same shop, on the 17th of March, four quarters of beef, which were unsound, and a third summons against Archer was for depositing at the shop, 93, Cowcross-street, 61 pieces of beef which were unsound. Mr. Hales prosecuted on behalf of the Holborn District Board of Works. George Billing, sanitary inspector, proved seizing three quarters of cow beef from Mr. Link's shop on 19th February. The meat was soft, wet, and flabby. Clearly the animal had died from tuberculosis. This evidence was corroborated by Dr. Bond, medical officer of the district. Mr. Kennedy: What would be the effect of eating this meat? Dr. Bond: It would be liable to produce tuberculosis. Mr. Kennedy imposed a fine of £10 in each case. In the second case the animal, a cow, had died from tuberculosis, and in the third case the meat smelt strongly of drugs, the contention of the prosecution being that the animal had been physicked before its death. In these two cases Mr. Kennedy fined the defendant £40, making £50 in all.

At Clerkenwell, on June 4, before Mr. Horace Smith, Augustus Berry Norman, pork butcher, of 52, Essex-road, was proceeded against by the Islington Vestry for having in his possession, in course of preparation for sale, seven pieces of pork unfit for the food of man. Mr. Bramall, solicitor for the Vestry, appeared to prosecute; Mr. W. T. Ricketts, senior, defended. The case for the prosecution was that on May 20 Edward Fortune, sanitary inspector, visited the defendant's shop, and found the pork which formed the subject of the charge. Three of the pieces were raw and salted, and lying beside another cooked piece. Near by was found a sausage-machine. In the brine bath were found three more pieces (bellies), also unsound. The defence was that the pieces first referred to had been found to be bad; and the same day the inspector called the defendant had instructed one of his shopmen to take them to a marine store dealer's opposite, for the purpose of selling the fat. They had been busy that day, in consequence of which there had been some delay in carrying out defendant's instructions. The condition of the pieces in brine was not known to the defendant. The sausage-machine, Mr. Ricketts contended, had no significance, as the season for making sausages was over. Moreover, sausages were never made of cooked or salted meat. The defendant, Mr. Ricketts added, had kept the same shop for sixteen years, and bore the highest character. Mr. Smith imposed a penalty of £5, and 2s. costs.

At Salford, on June 6, Thomas Edwards, of 159, Cross-lane, was summoned for exposing for sale in his shop fourteen pieces of tripe which were unfit for the food of man.—Mr. A. W. K. Fordham, meat inspector for the borough, proved that on May 18 last he saw the tripe exposed for sale in the shop. It was in a state of decomposition, and was unfit for food.—Dr. Charles E. Paget, the medical officer of health for the borough, corroborated Mr. Fordham's evidence, and the defendant was fined 14s. and costs.

### OBSTRUCTING A MEAT INSPECTOR.

At Halifax, on June 12, John Fernside Swift, grocer and provision dealer, St. James's-road, was charged with obstructing John M. Carnie, meat inspector to the Corporation, in the execution of his duty, on the 1st inst.—Mr. Tordoff, from the Town Clerk's office, appeared for the Corporation, and called Inspector Carnie, who deposed that on the day in question he went to the defendant's stall in the Borough Market and seized a jar of pickles, two tins of sardines, a pot of marmalade, and a tin of meat, which he thought were unfit for food. He laid the articles on one side at the stall and went for the sanitary inspector (Mr. D. Travis). When he returned shortly afterwards, the articles seized had disappeared, and defendant, on being questioned, said that as the inspector had not paid for the goods he had no right to them.—Police-sergeant George Parkin said that he was watching the defendant's stall at the time alluded to. As soon as the inspector left the stall the defendant hastily wrapped the articles in his apron and sped away with them as fast as he could.—Mr. W. Storey, for the defence, submitted that there had been no obstruction as defined by the Act, but the magistrates ruled otherwise, and imposed a penalty of 25s 6d., including costs.



## SPIRITS.

At Llanboidy, on June 10, charges of selling adulterated whisky were preferred by P. S. Henry Evans, of St. Clear's, against Anthony Thomas, Iron Duke Hotel, Clynderwen, and Wm Howells, Fox and Hounds Inn, Llangining, St. Clear's. In the first case, the analysis showed 65·29 water and only 34·71 of alcohol; and in the other case the analysis gave 74·29 water and 45½ under proof. Thomas was fined £5 and £1 8s. 4d. costs, and Howells £5 and £1 5s. 10d. costs.

At Llandilo Petty Sessions, Esther Davies was charged with adulterating whisky. Defendant said he had nothing to say in the matter. She had put a quart of water in two gallons of whisky, which she thought was the right thing to do.—P.C. 37 proved purchasing whisky with the defendant, and to having had it analysed, when it was found to be overdosed in water.—Thomas Williams was similarly charged. The case was similar to the foregoing. Defendants were fined 18s. 5d. each, including costs.—E. Lewis Evans, Brechfa, for a similar offence, was mulcted in the sum of 5s. and costs.

**ADULTERATING WHISKY.**—R. Evans, of the Victoria Inn, Llandilo, was next charged.—The police constable stated that he visited the defendant's house on May 4, and purchased a certain quantity of whisky. He bought it off defendant's wife. Defendant was not at home. Witness asked her to give him a shilling's worth of whisky in a bottle. He sent a sample of what he purchased to Swansea. He put it in three bottles in the presence of defendant's wife. She wished to go away, but witness asked her to remain.—By defendant: He bought some whisky for himself. He had the whisky in a pop bottle. He could not say there was no pop in the bottle. He put the whisky he left at the Victoria in a Worcester sauce bottle. He himself took the bottle to the analyst.—By the Bench: If there was any "pop" in the bottle, it was defendant's wife's fault.—Defendant produced the bottle that had been left with him, and which the policeman said had been tampered with.—Defendant said he wished to have the contents of his own bottle analysed, and wished to have the case adjourned for that purpose.—The Bench informed him that if he wished to have the analyst present he could do so, but he would have to pay his expenses. They considered defendant was only fooling them.—Defendant said he was very obliging to the bench.—The Bench inflicted a penalty of 13s. 5d.—Defendant: Will you allow me a case?—The Clerk: You write it out and let me have it. The defendant said he would let the Clerk have it that evening.

At Staines, on June 8, Mr. Edwin Hast Blamey, of the Pack Horse Hotel, Thames-street, Staines, was summoned by Inspector Tyler for having sold to him on May 11 some Scotch whisky which was adulterated with water.—Mr. Ball, of Staines, defended.—Mr. Tyler said that he went to the Pack Horse Hotel, where he purchased half-a-pint of Scotch whisky for 1s. 4d. He said it had been purchased for the purpose of being analysed, and Mrs. Blamey was fetched. Witness told her what he had done, and she agreed to the whisky being divided into three parts, which was done. In the course of conversation, he was told that Mr. Blamey was ill. He forwarded his portion of the whisky to the public analyst, whose certificate he produced. Witness added that according to the Act under which the proceedings were taken it would be a good defence to show that the spirit was not reduced more than twenty-five degrees.—Mr. Ball: So, in fact, three degrees of water was all that was in this whisky beyond what is legal?—Mr. Tyler: Yes.—In reply to further questions, witness said the deficiency might have been produced by evaporation; he did not call it a bad case by any means. He was, however, supposed to take proceedings, no matter how

trivial the case appeared.—Mr. Ball said the defendant had been ill, and on May 4 he left home to go to Margate, after giving instructions to one of his men as to making up the jars of whisky. The man, unfortunately, in attempting to reduce the whisky to the proper standard, added a half-pint of water instead of a quarter-pint.—Evidence having been called for the defence, the Chairman (Mr. Mitchison) said the magistrates believed the whisky was diluted beyond the limit by accident. They would, therefore, impose a fine of 10s. only, including costs.

At Malling, last week, John Manley, publican, was summoned for selling adulterated gin at Stansted on May 11.—He pleaded guilty.—Supt. Lane stated that the gin was discovered to be 39 degrees below the legal limit. Another sample of spirits was found to be in accordance with the Act.—Fined 10s. and costs.

## POISONED BY TINNED SALMON.

On June 9, Mr. William Hewitson, district coroner, held an inquest at the Punch Bowl Inn, Askham, near Lowther, on the body of Jane Horn Burn, 39, wife of Robert Burn, who died under peculiar circumstances on Sunday. Dr. Haswell stated that he was sent for on Thursday to attend deceased, who at the time was suffering great pain. On the following morning he found her in practically the same condition. On Saturday she vomited freely, and again on Sunday morning he was sent for. He found deceased in a very bad condition, and she died about one o'clock. No reason could be given to account for death unless that she had taken something deleterious in the nature of food. The only article in her last meal likely to cause death was tinned salmon, which had been opened for nearly 36 hours. Such food had frequently been known to cause poisoning of this sort. The salmon decomposed very quickly, and was likely to be poisonous. In his opinion death was due to the eating of salmon which was in a state of decomposition. A verdict of "Accidentally poisoned by eating tinned salmon" was returned.

## "THE BRITISH MEDICAL JOURNAL" ON COPPERED PEAS.

"A CASE recently heard raises questions of interest and importance to the medical profession, inasmuch as it places on record the fact that the ordinary tinned pea of commerce contains an appreciable quantity of added copper sulphate. When we further remember that it has been tendered in evidence that something like 20,000,000 of these tins are consumed in England annually, the importance of the case, both to the public and the profession, is enormous. The essence of the case was whether a provision dealer can legally sell green peas containing something like 3 grains of sulphate of copper to the pound. There was a conflict of expert opinion as to the precise amount of copper present, but the magistrate decided that 3 grains per pound might reasonably be inferred to be present. He further held that this amount of the salt was an ingredient in sufficient quantity to be dangerous to health, and also, we think rightly, refused to accept the argument tendered by the defence, that his decision would be injurious to the interests of the trade. It is beyond dispute that copper is not a normal constituent of the green pea, and so far must be regarded as an adulterant. Even in the absence of any great weight of evidence that the consumption of this amount of sulphate of copper is productive of sickness, in the interests of the public health we are bound to endorse the opinion offered in this decision, that the wholesale dispensing of the salt in preserved peas is against the best interests of the public. The case and decision thereon can be productive only of good, inasmuch as they call public attention to the fact that chemical ingredients of doubtful value are

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constantly added to articles of diet in daily use. If the public prefer to buy such sophisticated substances, let them do so, but the least that the trade can do is duly to notify the fact in legal characters on the outside of the covering of those articles that may have been so sophisticated. It would be better that the addition of colouring agents to articles of food of this class should be absolutely forbidden by law; failing this, authoritative standards permissible should be laid down, and the minimum quantity required for the preservation or colouring of the fresh article in no case exceeded. Even admitting that the preservative and colouring agents are relatively harmless, their general use cannot be discouraged too strongly, as they facilitate an uncleanly and slovenly treatment of food stuffs, rendering it possible to preserve articles of diet often in incipient decomposition."

### CHEESE.

At Clerkenwell, on June 10, Mary Ann Pendleton, provision dealer at Popham-street, Islington, N., was summoned for selling cheese that was not of the nature, substance, and quality demanded by the purchaser. The Islington Vestry's solicitor asserted that the cheese was found to be adulterated with 28 per cent. of foreign fat other than milk fat. The defendant asserted that she sold it in the same condition as she purchased it; she bought it as cheese and had no idea it was adulterated. Mr. Horace Smith asked if she had a warranty with it. The defendant replied in the negative. She would obtain one in future. Mr. Horace Smith ordered defendant to pay a fine of 10s. and costs.

### A CURIOUS COFFEE DECISION AT NORTH SHIELDS.

At North Shields, on June 5, Thomas Ainslie, local manager of the London and Newcastle Tea Company, was summoned for selling coffee said to be adulterated. Mr. Adamson, Town Clerk, appeared on behalf of the Corporation, and Mr. Bates defended. Mr. Adamson said that Fred W. McQueen, assistant to Mr. John McQueen, sanitary inspector, went to the defendant's shop in Saville-street, and told Mr. Ainslie that he wanted half a pound of coffee. Mr. Ainslie asked, "Our shilling coffee?" Mr. McQueen replied, "Yes, that will do." Defendant then handed him half a pound of coffee, for which Mr. McQueen tendered a shilling in payment, and received sixpence change. Mr. John McQueen then entered the shop, and speaking to his son in the presence of Mr. Ainslie, asked, "Is it coffee?" Mr. McQueen then divided the coffee into three parts, and sealed them as required by the Food and Drugs Act. A sample was taken to the public analyst, who certified that it contained 52 per cent. of coffee and 48 per cent. of chicory. Proceedings were taken against the defendant for having sold as coffee an article which was not. Probably Mr. Bates would say that the prosecution said nothing about its being a mixture and would point to the label (produced), which stated that the article was sold "as a mixture of the finest coffee and the finest chicory"; but that would not relieve the defendant, because a case had been decided in which the defendant sold as coffee that which on analysis was proved to contain 40 per cent. of chicory and 60 per cent. of coffee, yet the shopkeeper was convicted.—Mr. F. W. McQueen gave evidence in regard to the purchase, and, in reply to Mr. Bates, said he went to purchase coffee and expected to get coffee. He did not know the price of pure coffee.—Mr. John McQueen also gave evidence.—Mr. Bates: What is the price of pure coffee?—Witness: I should say 1s. 8d. per pound.—Mr. Bates: Do you know the price of chicory?—Witness: I believe about 6d. per pound.—Mr. Bates: Do you know that to mix chicory with coffee is allowed by the Treasury?—Witness: I suppose so, if it is sold as a mixture of chicory and coffee.—Mr. Bates said the summons was in the words of Section 6 of the Food and Drugs Act, 1878, but Section 8 of the same Act contained a very important provision with regard to the protection which it afforded to vendors in case they put a proper label upon the article, and that section provided that it was no offence to sell coffee mixed with any matter or ingredient not injurious to health and not intended fraudulently to increase its bulk, weight, or measure, or to conceal its inferior quality, if at the time it was delivered or supplied it bore a label, distinctly and legibly written or printed, showing that the article or drug was a mixture. They claimed they had complied strictly with the Act of Parliament. It was necessary, to ensure

conviction, first, that the complainant must prove that the chicory was injurious to health. It had not been suggested that a mixture of chicory and coffee was injurious to health. The object of the mixture was this—that the class of people who bought that kind of coffee would not have pure coffee; and the defendant had made that mixture deliberately with the object of meeting a public want. He contended that according to the analysis they were 2 per cent. on the right side, and asked, "Where is the fraud?" After several cases had been cited on both sides, the magistrates retired to consider their decision. On their return, Mr. Taylor said the decision of the magistrates was that in that case there had been no fraud; the defendant was protected by Section 8 of the Food and Drugs Act. The case was therefore dismissed. Mr. Bates asked the Bench for costs, saying it was a case of importance to the trade, not only in that district, but in other districts as well.—The Town Clerk said it was an unusual application.—Mr. Bates said he could point to cases in other courts. He had a case in which the alleged adulteration was 50 per cent., and the magistrates decided that the prosecution should never have been brought, and gave the costs on the highest possible scale that could be granted.—Mr. Adamson said he thought Mr. Bates should be satisfied with the result.—The magistrates said that, taking into consideration the whole of the circumstances of the case, the request was not an unreasonable one, therefore they granted it.

### THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 286.)

The experiment thus proves that it is a question about Standard Oil, No. 1, which among the mercantile products contains the greatest quantity of volatile and heavy oils. But Engler's flask is perfectly useless for the complete analysis of petroleum: this is possible only with the help of a dephlegmator or Column apparatus.

Thus if 150 ccm. of this oil is fractionated with the help of a Le Bel-Henninger boiling tube of 10 bulbs, one gets the following result:—

|                                |                                                                                                                                                                                                                                                   |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 170°6' F. to 224°0' F., 2 ccm. | 8 ccm. are 5·3 per cent. (by vol.). The remainder had a flash point of 96°8' F. (Abel). If now yet 1·5 ccm. (that is the total of 6·5 per cent.) is distilled, the flashing point rises to 107°6' F., and specific gravity amounts to about 0·80. |
| 224°0' F. to 231°8' F., 2 "    |                                                                                                                                                                                                                                                   |
| 231°8' F. to 239°0' F., 2 "    |                                                                                                                                                                                                                                                   |
| 239°0' F. to 242°6' F., 2 "    |                                                                                                                                                                                                                                                   |
| 8 ccm.                         |                                                                                                                                                                                                                                                   |

An attempt was made on a larger scale with an oil which had a specific gravity of 0·793, of a flashing point of 67°1' F. to 68° F., which therefore in Germany would not be admitted. (In Holland there is no law for a minimum for the flashing point.) Out of a copper boiler, with pipe L.B.H. of 10 Bulbs, 2 litres of this oil were fractionated—

| Temperature of Thermometer in the L.B.H. Tube. | Temperature of Vapour in Boiler. | Quantity distilled Over. | Flashing Point (Abel) of the Remainder. |
|------------------------------------------------|----------------------------------|--------------------------|-----------------------------------------|
| 149°0' F. to 194°0' F., abt. 230°0' F.         | to 260°6' F., 27 ccm.            | —                        | —                                       |
| 194°0' F. to 212°0' F., "                      | " 260°6' F. to 275°0' F., 44 "   | 44 "                     | 80°6' F.                                |
| 212°0' F. to 222°8' F., "                      | " 275°0' F. to 309°0' F., 85 "   | 85 "                     | 98°6' F.                                |
| 222°8' F. to 239°0' F., "                      | " 275°0' F. to 309°0' F., 11 "   | 11 "                     | 104°0' F. and spec. grav. 0·803.        |

167 ccm. = 8·3 per cent. by volume.  
= 123 g. = 7·5 per cent. by weight.

(The fractioning with the two thermometers illustrates, by the way, in a clear manner the thorough separation of the vapours by means of the L.B.H. or Column apparatus, and can therefore also be



recommended for laboratory experiments.) The distilled portion was again fractionated with the same tube L.B.H. On the whole, 110 ccm. (= 5.5 vol. per cent.) were caught under 212.0° F. from 131.0° F. to 149.0° F.; and from 149.0° F. to 167.0° F., 11 ccm. in each case. From this it follows that this oil still contained naphtha of a very low boiling point.

The petroleum of Ph. Poth, Manheim, one of the few firms which are independent of the Standard Oil Trust, has, as sold in Amsterdam, a specific gravity of 0.802 and a flashing point of 80.6° F. to 82.4° F. (Oct., 1895). It is, therefore, a little less dangerous than the Standard Oil which is mostly burnt. A fractionation of 2 litres gave the following result:—

|                                 |                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 158.0° F. to 194.0° F., 15 ccm. | } = 106 ccm. = 78 g.; that is about<br>5.5 vol. per cent.; or 4.8 weight<br>per cent.; flashing point of the<br>remainder, 105.8° to 107.6° F.;<br>specific gravity, 0.814. |
| 194.0° F. to 212.0° F., 13 "    |                                                                                                                                                                             |
| 212.0° F. to 248.0° F., 78 "    |                                                                                                                                                                             |

2 litres of Russian oil, specific gravity 0.821, flashing point 86.0° F. (Abel), gave the following fractions:—

|                                |                                               |
|--------------------------------|-----------------------------------------------|
| 167.0° F. to 203.0° F., 5 ccm. | } Flashing point of the remainder<br>95.0° F. |
| 203.0° F. to 212.0° F., 28 "   |                                               |
| 212.0° F. to 89.6° F., 30 "    |                                               |

63 ccm. = 3.2 per cent. by volume.

I have repeated the above distillation experiments with some other samples of the almost exclusively used Standard Oil with the same result. It is sufficient to distil off by means of a Column apparatus 6 to 7 per cent. of the petroleum of 71.6° F. to 75.2° F. (or about 8 per cent. and 5 per cent. respectively) with an oil of 66.2° F. to 68.0° F. and 80.6° F. to 82.4° F. respectively (Abel test), in order to receive an oil of about 104.0° F. (Abel test).

The impression will be made that this result does not agree with the experiments published by Kissling (*Chem. Zeit.* 1895, 19, 778). If one merely compares his fractionation experiments of ordinary American petroleum (Abel test 69.8° F. to 78.8° F.), with those of safe oils, for instance, of 38.5-42 test, one sees that the differences in the volume of the first fraction of 212° F. to 302.0° F. amount from 10 to 15 per cent., not as with me from 6 to 8 per cent. This difference is simply explained by the fact that I have used a high L.B.H. tube with 10 bulbs, and my colleague in Bremen one with only 4 bulbs. Before I compared my numbers with those of Kissling, I had found that one must distil with an L.B.H. tube with 5 bulbs, out of 150 ccm. petroleum (test 71.6° F. to 73.4° F.), 11 ccm., in order to receive an oil of 104.0° F. test, while with a pipe of 10 bulbs one needs to take away only 9.5 ccm., and then one obtains a remainder with a flashing point of 107.6° F. Just as in distillation of petroleum, the Column apparatus exercises, as it is well known, an especially strong separating influence, whilst in an ordinary apparatus (like Engler's flask), the different parts are easily distilled together. Kissling is therefore perfectly right when he says that the use of Engler's flask gives a very imperfect picture of the composition of a petroleum. This is also true, although in a less degree, of his tube with 4 bulbs, compared with the tube which I used with 10 bulbs. The second fractionation of the first portion proves this. It is probable that the ability of separation of the Column apparatus used in Works excels considerably that of the 10 bulbs tube.

Now, it is evident that Europe receives, under the name of burning petroleum, from America these 6 to 8 per cent. of naphtha, the presence of which in the petroleum of many of the United States is not allowed; and these 6 to 8 per cent. are paid, besides the material value, with hundreds of human beings killed and wounded, also with an exceptionally great amount of

damage caused by fire, and a feeling of continuous insecurity. One has a right to ask earnestly if the price paid is not too dear.

#### THE DANGER OF PETROLEUM.

It is well in this place, shortly, to consider the kind of danger which is caused by petroleum, especially since it has been shown that one now must occupy a different standpoint than formerly when the legal flashing point was fixed. Until now, almost exclusively, especially in Germany, the danger of explosion of mixtures of vapours in burning lamps has been considered, in consequence of the many cases reported by the officers of the fire brigades. This is a mistake, as shown by a publication of the German Commission for Standard measures, 1893, and also according to the experiences of the fire brigade at Amsterdam; only about 1 per cent. of petroleum accidents are caused by real lamp explosions. This mistake can be explained first, because the public wish to hide the upsetting of lamps; and, secondly, because the sudden great flame, which appears momentarily in consequence of the presence of 5 per cent. of naphtha, and spreads so quickly, makes upon the eye the impression of an explosion. Here, then, the danger of oil of a low flashing point appears plainly in contradistinction to that of 104.0° F. to 120.0° F. If a lamp or a cooking apparatus filled with this latter oil is upset, the oil will either not ignite at all, even if, as has been shown by experiments, the burning wick is in contact with the oil; or in case it should ignite, the flame spreads slowly, does not flare up, and thus can be much easier extinguished. The oil of 73.4° F. to 75.2° F. test, on the other hand, ignites even if the burning wick is some distance from the spread oil. And thus we come here to a second entirely false notion—of those who, in the question of avoiding of accidents by petroleum, advocate exclusively a law for secure lamps. Thus Alfred Spencer, chief officer of the London Fire Brigade, in an official report, makes the untrue assertion that oil of 73.4° F. (Abel test) does not develop ignitable vapours under 100.4° F. This assertion is based on the so-called identity of the former English open flash point of 100° F. with 73° F. (Abel test). But this asserted identity has no value, because in an open test one does not find the inflammability of the original oil, but that of the oil which has lost, during the experiment, a more or less considerable quantity of volatile parts. An open flash point and a burning point must therefore be considered *cum grano salis*. As already noted by Mr. Keates in 1872, one can, if the experiment is made slowly, get every possible temperature with an open test; a conclusion as to the inflammability of the original oil thus will therefore be without value. Already Mr. Steuart has given the proof that oil of 73° F. test is still ignitable at almost the same temperature, and that in larger quantities the flash and the burning point of petroleum almost coincide. I shall, when I treat of the declarations of Mr. Spencer, which he gave in 1894 to the Parliamentary Commission, also report some very simple experiments which show that flash and burning point can, so to say, coincide, and that a so-called burning point of 100° F. of oil of 73° F. (Abel test) simply refers to oil which, during the experiment, has lost a large part of its volatile parts. Already, by the great number of accidents, it is proved that both points lie very close together, and that one would do better not to consider the burning point at all. On the other hand, it is easily understood how the American manufacturers stick to the fire test, which is apparently high, and which also originated and has been in use from the first years; so it is said, for instance, that a fire test of 120° F. coincides with about 73° F. (Abel), apparently a very high temperature.

(To be continued.)



# YORKSHIRE RELISH.

---

## CAUTION.

---

**WILLIAM POWELL** (Trading as Goodall, Backhouse & Co.)

**v.**

**THE BIRMINGHAM VINEGAR BREWERY COMPANY, Ltd.**

---

**Take notice** that on the 29th day of October, 1895, The Honourable Mr. Justice Stirling ordered that the Defendants, their servants and agents, be perpetually restrained by Injunction from using the words "**YORKSHIRE RELISH**" as descriptive of or in connection with any Sauce or Relish manufactured by them, or Sauce or Relish (not being of the Plaintiff's manufacture) sold or offered for sale by them without clearly distinguishing such Sauce or Relish from the Sauce or Relish of the Plaintiff.

**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

65 & 66, Chancery Lane, London,

*Plaintiff's Solicitor.*



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FROM CATTLE REARED IN AUSTRALIA AND SOUTH AMERICA.

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But BARON LIEBIG, the great German chemist, discovered and publicly declared on Nov. 11th, 1865, the unsuitableness of these preparations as resuscitating agents or as food in any direct sense. As he truly says:—

**"Were it possible to furnish the market at a reasonable price with a preparation of Meat combining in itself the albuminous, together with the extractive principles, such a preparation would have to be preferred to the Extractum Carnis, for it would contain ALL the nutritive constituents of Meat." Again:—"I have before stated that in preparing the Extract of Meat the albuminous principles remain in the residue; they are lost to nutrition, and this is certainly a great disadvantage."**

The Albumen and Fibrine are the only nourishing portions of the Beef, and they are not present in Meat Extracts, &c., which, therefore, are only stimulants and no more nourish the system than the poker feeds the fire.

Bovril supplies the nourishment so conspicuously absent in these preparations, and this is secured by the introduction of albumen and fibrine (or rather the entire lean of beef) desiccated at a low temperature by special process, and subsequently pulverised to a minute degree of subdivision. By this means the entire nourishment of animal food is adapted to the feeblest and most sensitive system, and perfect assimilation is secured with the least possible expenditure of vital energy.

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# Food & Sanitation

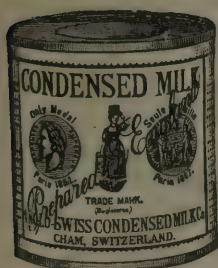
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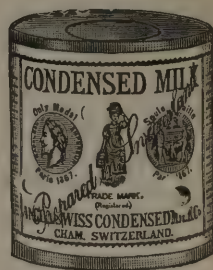
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SIR HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8, 1893), says:—“Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter.”

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## Food and Sanitation.

SATURDAY, JUNE 27TH, 1896.

### BANNISTERIANA AND BEER.

MR. BANNISTER as a witness always commands our admiration. We know that what he says is not worth serious consideration, but he ever fights plausibly for his department and to shield the follies of Sir Algernon West and the others who lured Mr. Gladstone into the abolition of the malt tax. Mr. Bannister knows that, thanks to his department, there can be no adulteration of beer, because the brewer can, if it pleases him to do so, make it from the contents of his dust-bin plus chemicals, and, thanks to the "tied house" monopoly, whereby the publican is the big brewer's servant, compelled to sell whatever is sent him, such swipes could reach an Englishman's stomach. But Mr. Bannister

knows as well as a here-and-there person which way the cat jumps and the part that beerage plays in the peerage, and in the real government of this kingdom. On June 23 he gave evidence before the Licensing Committee, which is a hybrid one, whereon, curiously enough, brewers and their friends predominate. We don't think it was meant or engineered that they should, but these accidents are apt to occur with House of Common Committees, and give us the greater cause for smug gratification that we are not as America is, where such matters are "squared."

Mr. Richard Bannister, Deputy Principal of the Inland Revenue Branch of the Government Laboratory, Somerset House, in reply to Mr. Whittaker, M.P., said there was an impression that new spirits contain a very large quantity of fusel oil and other bye products of the manufacture, and that by ageing this fusel oil was modified; but an investigation made in 1891 showed to demonstration that the fusel oil in the spirits was practically not altered by keeping. *It was his experience that practically there was no injurious adulteration of liquor.*

If injury does result from drinking it is the result of drinking what would be called pure and wholesome liquors?—Exactly, and immoderately drinking them.

Then those who rely on getting rid of the evils of our drinking system by securing what they term pure and wholesome liquors are mistaken?—As far as drunkenness is concerned, yes.

By Mr. Young, M.P.: In distilleries the manufacture was carried on in a very scientific way, and he had discovered no adulteration there. In the retail trade the adulterant generally was water. The public were protected against adulteration, not only by the Revenue authorities, but also by the analysts under the Food and Drugs Act.

By Mr. Riley Smith: *In the opinion of his department, beer was never purer than in the present day.*

By Mr. Grinling: On examining several samples of whisky obtained at low public-houses, they found that the whisky used was patent still whisky, and therefore contained less fusel oil than the ordinary Scotch and Irish whiskies. There was a great run on French wines in summer, but in the autumn and winter months people turned to the Australian wines, because they were fuller and contained more spirit. There ought to be an excise duty on British wines, because, in examining samples of spirits for drawback on export, British wines had been found to be present, so that drawback was being claimed on spirits which had not paid the original duty. Such abuses were found in connection with so-called temperance drinks that something should be done for the purpose of bringing them into line in the same way as the drinks made by licensed brewers and distillers. Sometimes these herb beers were used for the purpose of making people drunk. There was no doubt about the superiority of the wholesomeness of commercial beers as compared with these herb beers.

By the Bishop of London: He had heard of the impression among artizans that publicans adulterated their drinks; but that was not well founded. There was a case in the north of a working man who, on being charged with drunkenness, assured the magistrate that he had only had one pint of beer that day, and that the beer must have been adulterated. The case was adjourned, and it was found that the man had been into thirty public-houses that day, and had had something to drink in each. (Laughter.)

Mr. Riley Smith is a brewer, and has done his class service, for this assertion about the purity of beer—one which our readers well know is unmitigated bosh—will enable the brewers to put an extra polish on their armour of platform lies. But it will also endear Mr. Bannister to the brewers, so there is method, after all, in this class of evidence. Truly Mr. Bannister is admirable as a witness, and we regret he does not champion a better cause. But there is also another



side. We may quote here what a public analyst, who could teach Mr. Bannister analysis, said, not long ago, about beer and its purity:—

"Owing to the excise authorities, advised as they are by Somerset House, the present state of regulations concerning beer is truly deplorable. For fiscal purposes one substance after another has been allowed to be put into beer. There is no need to add malt, nor to use hops; there is no regulation as to the minimum strength; you can add as much salt as you like, and injurious preservatives in any amount, to counteract the effects of bad brewing. In fact, beer at present, thanks to Somerset House, may be any alcoholic decoction which the ingenuity and dishonesty of a brewer may suggest, and if a public analyst takes proceedings against a particularly bad sample, he is met in Court by interested brewers' chemists, who swear that all is as it ought to be, and Somerset House appears with all its official weight and defends anything and everything. As a public analyst, I frequently am called upon to analyse beer for the authorities under which I act, but I have invariably to report that, according to excise regulations, such samples are genuine. My authorities, who know in many cases that the samples sent me are of vile quality, no doubt think that they have either a fool or an incompetent chemist as public analyst."

Mr. Bannister knows this is true, and he further knows he cannot disprove it. It is just as well that the whole truth should be stated, or the committee and the public might swallow Mr. Bannister's incomplete one without a grain of salt. We are not enamoured of foreigners and their ways, but even His Madness the King of Bavaria was not mad enough to allow beer to be debauched to "swipes."

At the Exhibition at Nuremberg (open solely to Bavarians), the barley and malt industry is fostered almost unduly. Beer is an important item to every Bavarian, and it is the one country where it is to be found exquisitely good and pure, because nothing but barley-malt is allowed to be brewed. Yet the State offers £100 in prizes for barley.

The present *en regle* lie is to say that our light beers could not be brewed from English barley, and that if rice, sugar, etc., were prohibited, native agriculture would not benefit. It is curious that the persons using this plea are brewers making an extra profit out of the use of the cheaper substitutes, or persons concerned with sugar, rice, chiretta and chemicals. Thank Heaven, we in England have Governments and committees always above suspicion. Were it not the case we might begin to fancy there was something wrong somewhere.

#### AN IMPORTANT DISCOVERY.

DR. JACQUES, of Boston, America, has, says an American scientific journal, made a discovery that ranks with the greatest of our age. He claims to have discovered how to produce electric energy by the direct combination of carbon and oxygen with an efficiency that promises commercial success. The exact method employed cannot at present be given in detail, though it is hinted the process consists in immersing carbon in a bath of fused caustic soda and forcing air up through the liquid. Doctor Jacques declares he found:—

"If oxygen, pure or diluted, as in air, be caused to combine with carbon or carbonaceous materials—not directly as in combustion, but by an intervening electrolyte—the potential energy of carbon may be converted directly into electrical energy instead of into heat."

Tests of the discovery are said to have been made recently by Professor Cross, of the Massachusetts Institute of Technology, Rowland of Johns Hopkins, and Stone and Webster, well-known electrical engineers. The apparatus employed by each was a group of one hundred iron cells, each twelve inches deep and one

and a-half inches in diameter, filled with caustic soda, the latter held in a state of fusion by a fire beneath. The cells were connected in series, one wire being attached to the cell itself and the other to a carbon immersed in the electrolyte. The current obtained, we are told, was "sufficient to light thirty sixteen-candle-power lamps, the average potential being ninety volts, and the quantity being sixteen ampères." Only about eight pounds of carbon was consumed during eighteen hours, and "eighty-two per cent. of the theoretical potential energy thereof was converted into electrical current." The *Engineering News* declares it has "checked this from the figures, and found it correct on the assumption of 14,000 h.u. per pound of carbon." The heat used to fuse the electrolyte was not taken into account, as the amount of fuel demanded in an isolated experiment would of course vary with the size of the battery: neither was account taken of the amount of power used in forcing air into the electrolyte; but both are proper matters for determination in respect to a commercial plant. The *News* further adds:—"The high authority of Messrs. Cross, Rowland, Stone, and Webster—who vouch for the genuineness of the discovery—will be recognised by all, and if it is indeed true that eighty-two per cent. of the potential energy of the carbon can be converted into electrical current by means so simple, the importance of the invention cannot be over-estimated—it will create greater revolutions than those made by any invention hitherto known. But every engineer will wish to know more of this before passing judgment upon it.

The *American Paint, Oil, and Drug Review* says that Dr. Jacques is chief electrician of the American Bell Telephone Company, and under their auspices he has devoted much time in experiment and research to the great subject of transference of electrical energy, with the result already indicated. Fifteen years ago Edison proclaimed his faith in the ultimate attainment of the conversion of carbonaceous matter into electricity direct; now it is apparently a realised fact.

By a battery of ordinary construction electricity is produced by the oxidation of zinc in contact with copper and acid, evidenced in an electric circuit; zinc is thus decomposed. The oxygen of the air and the carbon of the coal are made to combine, not directly, but through the aid of caustic soda as an intervening electrolyte. The soda is placed into an iron pot, to which heat is applied until a temperature of 300 degrees is reached, when the soda fuses. Into this liquid is placed a stick of carbon; an iron tube is then introduced, through which air is pumped into the molten mass.

Oxidation is produced by the contact of carbon with the injected air, and no wasteful deterioration to the soda is apparent. The carbon and the iron pot are then connected by wire, and an electric current is thus generated, gauged by the amount of air supplied. By the multiplication of the pots mentioned, each of which constitutes an "electric cell," any desired voltage or electrical pressure is obtained. The power thus accumulates as pots are added, or the size of the pot is extended, without any loss whatever. As an example, one hundred one horse-power pots will exert a pressure of one hundred horse-power, while twenty-five horse-power engines will not exert a one hundred horse-power pressure, as is known to all expert engineers.

It is stated that actual test has demonstrated that eight pounds of carbon in this process will produce and maintain thirty incandescent lights of one hundred and sixteen candle-power for a period of 18½ hours, utilizing 82 per cent. of the electric energy of the carbon. When the fact that through the process of converting coal into steam as hitherto practised only 30 per cent. of this energy was obtained is considered, the brilliant advance this discovery heralds is obvious. The expensive, dangerous and cumbersome steam-engine and dynamo of the present system of electric current production will, doubtless, soon be dispensed with, as the



same amount of coal now consumed in producing a given quantity of electricity will, by the new process, yield fully ten times as much of the current.

### CHAMPAGNE: "SWEET" OR "DRY."

A MEDICAL man, who informs us that he "believes in fizz," writes:—

"I have not read Dr. George Harley's article in the *Contemporary Review*; but while substantially agreeing with him as to the value of champagne as a beverage, as well as a 'medicine,' for the gouty, I cannot, from your summary of his views, avoid the impression that as to the comparative excellence of 'sweet' and 'dry' wine, and the ethics of the manufacturers' trade, he is a little mixed. That 'whisky is worse for gouty people than champagne' I fully believe, because champagne is good and whisky is bad for the gouty; but certainly this cannot be explained by the fact that 'alcohol and acids are what really bring on gout,' seeing that no amount of alcohol will make a man gouty unless he inherits the gouty diathesis which is really a plethora of leucocytes or white corpuscles in the blood dependent on an original developmental peculiarity; and as regards acidity, whisky is neither acid itself nor productive of acidity. All separated or distilled alcohol—commonly called 'spirit'—is bad, because no amount of dilution by mixing with water qualifies the fact that the molecules of alcohol are irritating to those parts of the organism with which they come in contact.

"This is not, however, the main point of divergence from Dr. Harley's dictum to which I am anxious to direct attention. It is in reference to the 'dry' quality of the wine I venture to think he is astray. The facts are simply these: A decent vintage produces grape-juice, which, by the simplest process, can be completely fermented out, the whole of the sugar being decomposed, 95 per cent. of it breaking up into alcohol and carbonic acid gas. If this fermenting wine is bottled at the right moment, there will be enough carbonic acid gas given off to ensure a proper amount of 'sparkle' without the addition of any supplementary alcohol or liqueur or saccharine matter.

"What Dr. Harley calls the 'dégorgement' is only necessary to let the 5 per cent. of undesirable products, left or formed when the 95 per cent. of the sugar is converted into alcohol and carbonic acid, escape. This residue is composed of inferior alcohols, glycerine, and other matters. All that is required is to uncork and recork the bottles, allowing the 'impurities' to overflow. No addition whatsoever is necessary or desirable.

"Some years ago when prescribing for an owner of extensive vineyards in the champagne district, and advising the use of a really natural champagne, I ventured to suggest that he was one of the producers who could, if he would, give the world such a wine. At first he was sceptical; but after a little talk he promised to think over what I had said. I heard nothing more of the matter for two or three years, when one day I found on my table a specimen bottle of a wine professing to be free from sugar. There was nothing to suggest that this wine had any relation to my patient, and the names of the importers were wholly strange to me; but on examination I found no free sugar in the champagne, and subsequently I heard that it was a wine produced and manufactured in the way I had suggested. Since then I have used and recommended that wine. Why champagne-makers do not produce natural wine I cannot even conjecture. Of course I know nothing of the commercial aspects of the question. Perhaps 'It would not pay!' Without thinking quite as severely as Dr. Harley seems to think of the trade when he suggests that the manufacturer is 'able to pass off a sour as a dry wine' when he marks it 'brut,' I can readily conceive that there may be difficulties of a considerable magnitude in thoroughly fermenting a quantity of grape-juice in such a man-

ner that it should not turn 'sour,' but mature progressively; and, further, in so bottling it at the right moment as to allow just enough carbonic acid gas to be subsequently produced as will give it the requisite sparkle, and in disgorging the deleterious 5 per cent. of residuum at the proper time and in the proper way. It would surprise me to hear that there were many failures, and that the particular wine in which I take an almost paternal interest is occasionally no better than, possibly not as good as, other wines, from the consumer's point of view. Indeed, I have noticed this inequality myself; but if it be what I suggested—namely, an absolute natural wine treated on rational principles—it cannot have any fault which is not due to some blunder or mischance in the conduct of a simple process; and if it be thereby spoiled, it is, at least, not adulterated.

"Such 'additions' as those to which Dr. Hartley alludes, to make a sour wine seem 'dry'—e.g., 'adding salicylic acid'—can only be regarded as fraudulent, and with this phase of the subject I have no concern. My faith in natural wine may be confessed in a sentence: Nature has constituted the juice of the grape that it naturally undergoes the vinous fermentation, the conditions being favourable; and when the fermentation is complete, the result is a beverage useful as a stimulant, and in no sense injurious to the gouty, but, on the contrary, helpful to them, because it promotes the elimination of that uric acid which, though not the cause, is one of the initial morbid products of the process by which 'gout' is set up."

### THE "EXPERT" TESTIMONY NUISANCE.

WE are glad to find that at last a local authority has had the sense to make a real protest against the "Expert" nuisance. The Newington Vestry at its last meeting resolved that a letter be written to the Local Government Board and the Vestry of St. Marylebone protesting against the practice of Dr. Wynter Blyth, Medical Officer of Health of the Marylebone Vestry, appearing and giving evidence against the Vestry's officers in respect of proceedings taken against the owner of Nos. 13, 15, 17, 19 and 21, Ralph-street, for non-compliance with sanitary notices, and pointing out that such action is subversive of the efficient carrying out of the duties cast upon the Vestry under the Public Health (London) Act, 1891.

Mr. Dawes moved the adoption of the recommendation. He believed the Marylebone Vestry had been approached several times on the subject, but with no good result. The committee therefore suggested that a letter should be written to the Local Government Board.

Mr. Westcott held that it was very undignified for Dr. Blyth to interfere with local authorities in their efforts to improve the sanitary conditions under which the inhabitants lived, and he hoped the motion would be carried.

The motion was agreed to.

The "expert" witness has become a nauseating impertinence. Before the Petroleum Committee of the House of Commons "experts" can be found advocating the murderous monopoly of American thieves and plotters of murder. Before the Licensing Committee "experts" can be found deliberately lying to perpetuate the brewers' and distillers' monopolies, and give them *carte blanche* to make beer and spirits out of any trash and chemicals they choose to employ, and in every Parliamentary case where an effort is made for righteousness we find the fee-hunting expert liar, "Sir" this or that, earning his guineas by methods more inimical to the public well-being than were those of Fowler and other criminals recently executed. Fowler and his fellow abandoned scoundrels sacrificed at most a few lives. The "experts" who have been lying for the American oil



gang cooly advocate the sacrifice of a life per day. The "expert" scandal has already achieved such shameful and injurious notoriety and harmfulness that the Member of Parliament who would introduce a short Bill providing a compulsory lethal chamber for Parliamentary expert witnesses, and get it passed, would do a great and necessary public service.

#### WHAT THE ADULTERATION COMMITTEE IS EXPECTED TO REPORT.

At the time of going to press the Committee are considering their report, and, from what we can learn, it is just about what might be looked for. When Mr. T. W. Russell, ex-temperance spouter, temperance boarding-house-keeper, and political place-hunting hack, got appointed chairman of the Committee, we looked for a "burked" affair, and we believe we shall get it. In place of a competent board of reference to supersede the incompetent Somerset House one, Mr. Russell, it is said, thinks the existing body should only be enlarged. The Board of Reference will deal with such questions as the percentage of water in butter, the standard of fat for milk, the use of copper in peas, the use of farinaceous ingredients in such articles as cocoa and mustard, the character of labels to be used for mixtures, etc. But as it is not expected that the Board will set up arbitrary and hard-and-fast standards, traders and manufacturers will be able to make representations as to what standards are desirable. Margarine advocates of alteration in colour and form will not receive much encouragement. In the case of second, repeated and flagrant offences, heavier penalties are recommended, and the power to inflict imprisonment, which now exists in the Act in Section 3, will be extended to offences under the other sections. Something may also be recommended in order to make more stringent the qualifications of public analysts.

If this mouse be the result of the mountain's labour, we may well question if it is worth the expense incurred, wonder if our House of Commons really merits respect in anything, and if Charles Dickens was not right in refusing the disgrace of belonging to it. But Dickens knew it and its methods, for he had reported its rubbish for many years.

#### A VICTIM OF THE LATE LORD CHIEF JUSTICE.

"The evil that men do in their lives lives after them. The good is oft interred with their bones," said the world's greatest writer. Lord Coleridge is dead, and of the dead "*De mortuis nil nisi bonum*" is supposed to be the correct thing to say. Why it should be so we do not know, for the burying of truth because a man is dead is the height of folly. If it stopped at filling our cemeteries with lies it might do little harm, but it produces a mental squint, observable in those who compile the records of lust, rapine, and rascality, called history, as well as in those who read and accept beliefs—for example, such as those that Richard the Hunchback was the worst of villains, and Richard Cœur de Lion the best of men, the plain truth being that the deformed Richard was a wise statesman, keenly alive to the need of good government, whilst the other was a priest-ridden, ignorant animal, wallowing in gore, leaving the country he should have ruled to faction and oppression, whilst he slaughtered Saracens who had done him no injury, and made his followers follow his asinine example. An inquest held at Marylebone, on June 23rd, shows how Lord Coleridge's evil lives after him. It dealt with the death of Amy Downing Felsham, aged three months, the daughter of a builder's labourer, residing at 32, Blenheim-terrace, St. John's-wood. The evidence of the mother showed that the child had been fed on condensed milk since its birth.—The Coroner, Dr. Danford Thomas: Yes, that is no doubt the best food you could give it, but an artful dodge is practised

by some of the vendors of these milks, by which poor mothers are deluded. The mother buys a tin because the price is cheaper, not noticing a line at the bottom of the label, in the smallest possible type, "This does not contain the pure cream." This would not matter in itself if used for household purposes, but when a baby depends on it for strength it is utterly useless, as there is no nourishment to be obtained from it.—Dr. Johnson, of 4, Marlborough-road, deposed that death was due to injudicious feeding.—The jury returned a verdict in accordance with the medical evidence.

It is to Lord Chief Justice Coleridge that the shame of this deceptive labelling is due. In 1894 he sanctioned child starvation, and this infant is but one of his many victims. Mothers in thousands feed their children on these deceptive milks skimmed of cream. The infants have no chance of a sound constitution, but are rickety and unfit for the battle of life, or die as did this victim! It is sad to reflect that the dead can thus condemn the living to die, and an object lesson like this might well give our judges pause when they are hearing food cases.

#### THE BATTLE OF THE BREADS.

In a recent number of the *Revue d'Hygiène*, Dr. Vallin has an article in which he deals at length and in great detail with the quality of the flour from which bread should be manufactured. Although far from being a partisan of very white bread, which he believes to be less nutritious than the brown variety, the author is still less an advocate for bread made with flour from which nothing but the outer husk of the grain has been removed. Bread thus manufactured he regards as decidedly unwholesome, on account of the large amount of indigestible bran it contains. In small quantities it may possibly be useful as a stimulant to people whose intestinal functions are sluggishly performed, its effects in such cases being similar to those of mustard, but if employed exclusively it is likely to set up gastric irritability and catarrh. The conclusions which Dr. Vallin finally arrives at are thus shortly stated. White bread may be recommended to gourmets and such as live on the fat of the land; home-made bread to working men, soldiers, growing youths of both sexes, and pregnant women; wholemeal bread is only fit for dogs, or occasionally as a remedy in constipation. This is rather rough on wholemeal breads, and is far too strong speaking. It must not be forgotten that wholemeal bread has its peculiar defenders, who are assured that it is the panacea for all the ills that flesh is heir to. From a baker's point of view he has only to supply what the people insist on having, and it may confidently be left in the hands of those who demand what is palatable to them, and which they have found by experience to be beneficial to them.—*Baker and Confectioner.*

#### THE HOUSE OF COMMONS.

##### PRESERVED PEAS.

REPLYING to Mr. G. Whiteley, on June 22, Mr. Chaplin said his attention had been called to a decision given by the Deputy-Chairman of the County of London Sessions, condemning as injurious preserved peas in the preparation of which sulphate of copper was used. He was not in possession of any report made in France, or in any other country, which had led to the unrestricted sale of such peas as quite harmless, nor was he aware that the Justices of Glasgow and Bristol had held that such peas were harmless. He was not in possession of any information or any evidence which proved that peas coloured by means of sulphate of copper might be habitually consumed without injury to health, and he therefore could not issue a recommendation to the local authorities to discontinue the prosecutions of sellers of such peas.



## A POINT FOR FIRE BRIGADES.

A FIREMAN'S work is so full of danger that every effort ought to be made to equip him well for his calling. We often read of lives being lost because, however heroic the efforts of the would-be rescuer, he was driven back by the flames. An experiment was made at the recent meeting of the National Association of Fire Engineers, at Montreal, where was exhibited a complete suit of fire-proof (asbestos) clothing. A fireman thus clad entered a burning wooden house, where he remained for several minutes, at the same time going through a performance calculated to illustrate life-saving and to exhibit the advantages of his dress. His hands were protected by asbestos gloves; his boots, of the same material, were soled with iron; and his asbestos helmet was glazed with mica, while a respirator in the crown permitted him to breathe the stifling air with impunity.

If the adoption of such a garb only enabled its wearer to bear the heat and stifling air a minute longer than at present, that would mean a great saving of life, sufficient in itself to make the experiment worthy of serious consideration in this country.

## THE LATEST ABOUT MILK.

THE editor of a native Indian journal has a knowledge of milk sufficiently profound to qualify him for becoming head of the Somerset House Chemical Department. He says: "The digestion of milk is promoted or retarded according to how it is swallowed," and so on. The opening sentence of this passage runs: "In the feeding of infants, much depends on how the swallows homeward fly."

## THE FOOD OF THE POOR.

AT North London, on June 22, William Harvey, sanitary inspector of Hackney, brought before Mr. Mead a hand-cart full of rotten cherries and putrid meat which he had found exposed for sale on barrows in various parts of Hackney. There were over a hundred pounds of cherries which the officer said were being retailed at the rate of 1d. per pound. The meat was in a shocking condition. The persons dealing at these stalls belonged, as a rule, to the poorest class.—Mr. Mead saw both the fruit and meat, and at once made the order for its destruction.—The inspector then applied for summonses against the stall-holders for offering the fruit and meat for sale for human consumption, and these were granted.

## THE ICE CREAM TRADE.

WITH the temperature in a fair way to the nineties, the ice-cream man has his opportunity. But Dr. Alexander, the Officer of Health for Poplar, once more utters a word of warning against the chilly delicacy. In one of the premises where ice-creams are made, the sanitary inspector "found the tins stored near the water closet in a covered yard leading from the sleeping room." Dr. Alexander adds:—"It seems to be a practice with ice-cream vendors to collect ice from the docks, canals, and ditches for freezing purposes, but it has transpired that ice forms an ingredient of what is known as water ice, which is also sold in the streets. In two of the premises large quantities were found stored in cold cellars; the ice in one of these cellars I visited had been taken from the Millwall Docks; it was very dirty, and looked like pieces of coal." Every now and again attention is called to this sort of thing; but apparently the ice-cream trade, under these conditions, goes on and flourishes. Why should an ice-cream manufacturer with filthy ice intended for human consumption in his possession receive more consideration than, say, the would-be purveyor of diseased meat, the *Westminster Gazette* asks.

## THE IMPORTATION OF IMPURE MILK.

A LETTER was read from Mr. G. Curzon, of the Foreign Office, at the last meeting of the London Commission of Sewers, stating that, in order to further the efforts now being made by the Commission to insure the purity of imported milk, in accordance with the instruction of Lord Salisbury, Her Majesty's representatives in the countries referred to by the Commissioners, namely, in Sweden, Holland, Belgium, Denmark, and Russia, had been furnished with a copy of the letter of the Commissioners, and instructed to endeavour to obtain and send home copies of the regulations in use in those countries for prevention of the sale of possibly infected milk, and any other information likely to be of service to the Commissioners. On the motion of Mr. Morton, the clerk was directed to write and thank Lord Salisbury for his courtesy. The letter was referred to the Sanitary Committee.

## TINNED HORSE AND COMMON SENSE.

OUR contemporary *Farm and Home* is usually so well edited that we are somewhat surprised to find in its columns the following:—

"The article on this subject on page 152 induces me to relate a 'a bit horse deal' that I knew of last autumn. The subject was a lame mare, healthy and fat, which had ceased breeding, and was too lame to work with any comfort to herself or her owner. At the autumn fair the man refused £4 for her—not over wisely, perhaps. On being asked what the intending purchaser proposed doing with her, he replied he was going to send her to Antwerp to make—ah, well, I won't say what, but the article is professedly made from pure ox-beef. Two or three weeks after, the former offerer turned up at the farm enquiring if the old mare was still for sale. Eventually he bought her for a few shillings over his first offer, and secured another at a neighbouring farm for about £3. This latter was of mature age—very—with a leg as thick as a man's body almost, and being curious to hear as to the truth of their destination I interviewed the purchaser. He was quite open on the subject, and said that nearly every week he sent eight or ten over from Newcastle to Antwerp; the week after the fair over twenty had gone. They cost 20s. each carriage, and on arrival were, with scores more, sold, the better class to make this article, the worse to make sausages. It seems there is a regular trade weekly from most of the north-east ports. I should not like to vouch for the exact truth of all his statements, but that the man firmly believed them there is no doubt, and he said he frequently went over to sell the horses. Anyway I don't see why a healthy, well-fed horse should not be pleasant enough eating, but the greasy-legged ones rather spoil the appetite perhaps.—M."

That horse is made into tasty *deutsche delicatessen* we know, and that it finds its way to the tables of the *gourmet* at club or restaurant is no doubt the case, but that horses are used for extract of meat at Hamburg or elsewhere is ignorant rubbish. We do not in saying this believe that there is anything more than bigotry and stupidity behind the objection to horseflesh as a food. A horse is the cleanest feeding animal, and his food is of the choicest. He does not revel in filth as does a duck, or convert dung-heap garbage into fresh eggs as does a hen; but, unreasoning creature that man is, he will gloat over duck and green peas, or grilled chicken, albeit the one and the other are common scavengers. We have eaten horse with relish when we have dined with "food" experts and have tried their salami, worsht, etc., but it wouldn't pay firms like Nelson's, Liebig's, or Kemmerich's, even if they were so disposed, to use horse for making beef extract. Prime oxen can be bought at a tithe the price of the very cheapest worn-out horse, so the use of horses for the purpose would argue that clever, enterprising and world-known business men are as ignorant and foolish as *Farm and Home's* correspondent "M.," for they would indeed be foolish to pay more than £4 for horses when prime oxen can be had for a few shillings in South America where the extract is made.



## A WELSH DEACON ON ANALYSTS AND MILK.

A WELSH Congregational deacon—John Williams, a saddler—came before Major Lewis and Mr. J. H. Jones at Aberayron on June 18, charged with selling adulterated milk.—The evidence was that the milk contained 14 per cent. of water.—Defendant, who had been ill, handed in a written defence, in which he said he recently sold a cow because its milk was poor, and bought another, which had disappointed him, but, though he expected to hear the milk was poor, no water had been used. On this point he would believe the word of his honest and truthful servant who sold the milk, in preference to the reports of half a dozen analysts.—The analyst said it was his opinion that the milk was adulterated. He based his opinion on the fact that it contained only 7.25 per cent. of non-fatty solids, whereas, in his opinion, it should contain no less than 8.5—a difference of 1.25 per cent. Some analysts were of opinion that 7.40 should be the lowest. In the face of this, defendant urged that the bench should get something better than an analyst's "opinion" before taking away a man's character. Still, he was prepared to bow to the magistrates' opinion, and carry to his grave the stigma of a dishonest action, and perhaps some day have it flung into the face of his children, and no one except himself would know how cruelly he had been wronged.—The servants swore they had never been instructed to adulterate the milk.—Major Lewis said that adulteration was very serious, as milk formed so large a part of children's food, and defendant was fined 20s. and costs.

## ST. GEORGE'S VESTRY AND ANALYSES.

THE aristocratic calm of this vestry was somewhat disturbed at its last meeting by a member named Tolley. He began with the dust, or after the books respecting it had been inspected and passed. The *Westminster Press* says:—

Mr. Tolley awoke up to the fact that he had something to say on this subject. With his *pinx nez* perched on the point of his nose he said that he had received many complaints from persons in his neighbourhood that their dust was not removed.—Mr. Gray: We have passed the books, don't let us go back and waste our precious time.—Mr. Tolley wheeled round upon Mr. Gray, and said: If you had been in the chair instead of the Colonel I might have consulted you, but I do not mean to consult you now. (Laughter).—The Sanitary Inspector reported that he had sent a sample of water taken from a private well in Piccadilly to the Vestry's analyst, and that the sample had been declared to be unfit for drinking purposes, owing to the presence of sewage. There was a bill of £3 3s. for this analysis.—Mr. Gray: Have we to pay if we send a sample of water to be analysed?—The Surveyor: Yes; just as I would have to pay to have a sample of oil analysed?—Mr. Gray: What is the fee in this instance?—Mr. Taylor: £3 3s.—Mr. Tolley: I would like to know what we pay our analyst £500 a year for.—Mr. Piper: We don't pay £500 a year.—Mr. Tolley: Then what do we pay?—Mr. Piper: £300.—Mr. Tolley: Well, I think it is disgraceful that we should pay this man £6 a week and also pay him for analysing a sample.—Mr. Piper: Address yourself to the chair. I'm not chairman. (Laughter).—Mr. Tolley: Well, I'm looking at you because you have such a bold expression. (Laughter). I'll move that this bill be not paid.—The Chairman: The bill is not before us.—Mr. Tolley: No; but it will come before the Finance Committee, over which I have no control, and they will pay the money, of course. I'll move that we do not endorse the action of the sanitary inspector.—Mr. Piper: I cannot understand that we have any power to divert the sewage that finds its way into this well. Private wells are altogether out of place in London, and ought not to be allowed. (Hear, hear).—Mr. Gray: Do you mean to tell us, Mr. Piper, that the sanitary arrangements in London are so bad that the sewage percolates from the sewers into the well.—Mr. Piper: Undoubtedly it does.—Colonel Hill James: I think the sanitary inspector acted very properly in having the water from this well analysed. (Hear, hear).—Mr. Gray: Has there been any death here?—Mr. Taylor: Yes, but it is not attributed to the water. The owner is perfectly willing to close this well if desirable.—It was agreed to close the well.

There is a serious side, however, to Tol, lol, toley olleying, and it might be better understood by an illustration. In 1854, the people of Soho suffered from the ravages of cholera, 609 persons dying in one month. Their favourite water was taken from the Broad-street pump, and it was found that a child had died of cholera, in the street, and its excreta had been emptied into a cesspool about three feet from that well. An examination disclosed the fact that the bricks of the cesspool were loose, and the contents drained

into the pump well. A toll-loll-tolley person who lived at the West End fancied this Broad-street well water, and had some sent to her each day. This lady and her niece who drank the water both died of cholera, although there were no other cases in the neighbourhood. It would have paid Soho to expend three guineas in having the water analysed and it would have been glad to have had a chance of commending a Sanitary Inspector's foresight, rather than face a gruesome total of 609 deaths from cholera in one month. There is no money so well and wisely spent as that devoted to sanitation, and it is impossible to say this too often, for every day there are thousands born who know nothing of it. St. George's, Hanover-square, has its selfishness and class bigotry; it objects to equalisations of rates with its namesake, where disease, misery, and squalour are ever present, the unhappy heritage of a part of the thousands who toil that the residents in St. George's, Hanover-square, may draw dividends or rents, and live in luxury. But with its selfishness and snobbery it sets a lesson to England in enforcing the Food and Drugs Acts, and in public health work. At the root of this selfishness may lurk, but it is a selfishness directed to the public benefit and worthy, therefore, of praise.

## RUBBING YOUR LEGS WITH WHISKY.

If we allotted prizes for ingenious defences, we should certainly send one to Mr. George Saunders, licensed victualler, of the Malt Shovel Inn, Bubbenhall, who was summoned at Leamington last week, at the instance of Mr. G. H. Salmon, of Earlsdon, inspector under the Food and Drugs Act, for selling whisky which was adulterated with 18 per cent. more water than is allowed by Act of Parliament.—Mr. A. E. Hassall (Messrs. Wright and Hassalls, Leamington), appeared for the defence, and pleaded not guilty, his ground of defence being that the whisky was not for sale.—Inspector Salmon said that on the 28th May he called at the Malt Shovel Inn, and saw Mrs. Saunders. He asked for a small whisky and soda, and was supplied. Then, taking a bottle from his pocket, he asked to be supplied with half a pint of Scotch whisky. Mrs. Saunders called her servant, who fetched the landlord. Mr. Saunders, when he appeared, said he had no Scotch. Witness then asked for half-a-pint of Irish, and defendant replied that he had not got any until the traveller called. Mrs. Saunders said, "You have got some Irish whisky." Witness had seen some Irish in the bar when supplied with the Scotch and soda. Defendant repeated that he had not any whisky until the traveller called. Witness then asked for brandy and gin, and this time also defendant said he had not a supply of either. Witness told the landlord he was an inspector under the Food and Drugs Act and under the Weights and Measures Act, and cautioned him against obstructing him in the exercise of his duty. Witness then asked to be allowed to see into the cupboard in the bar, but defendant locked the door, and put the key into his pocket, saying, "It is my private cupboard; I have no whisky or brandy." Witness told him that if he did not unlock the cupboard he would send for a constable. Defendant left the bar, taking the key with him, and his wife came in. Witness again sent for the landlord, and after administering a further caution, he was supplied with half-a-pint of brandy, being charged 11d. In answer to a query as to whether the price was right, defendant replied "Yes." Witness then asked for half-a-pint of whisky, and defendant ultimately said to his wife "Let him have it," and went out of the bar again. Witness had half-a-pint of Irish whisky, and was charged 1s. 1d. Witness afterwards informed defendant he had purchased the spirits for the purpose of analysis, and the samples were divided, one portion of each being sent to Dr. Bostock Hill, the County Analyst. Certificates he had received from the Analyst showed that the whisky contained 18 per cent. more water than was allowed by Act of Parliament.—Mr. Hassall said he did not dispute the facts, as the real point at issue was that the defendant kept a small house at Bubbenhall and sold practically nothing but beer, and never kept any spirits in the house except perhaps a little drop for his private use. On the day in question, before he knew who Mr. Saunders was, he refused to sell. The spirits were kept locked up in a cupboard, of which he kept the key, and he could tell the Bench he had never sold any Irish whisky or brandy out of these bottles to any customers, and only let the spirits go on this occasion under the threats of the law.—The defendant said he did not know who the inspector was when he sold him the whisky; he had not had the pleasure of seeing him before. He was subject to rheumatic gout, and used the whisky for rubbing into his leg. It was not the sort of stuff he would give to customers to



drink. He had applied for a spirit licence because he had always done so. He purchased from the brewery about half a gallon of spirits at the time. He had been landlord three years.—The Clerk gave it as his opinion that a landlord was bound to supply spirits if he was properly licensed and had them in the house.—Major Marsland: Do you think he would take out a licence to rub his leg? (Laughter.)—Mr. Hassall: No, sir.—Major Marsland: The whisky is good enough, he says, to drink himself, and to rub his leg?—Mr. Hassall: Yes, but he would not sell it.—Mr. Hassall said he had found that the last time defendant procured whisky was in January, 1896, when he had half a gallon. He put in a letter from Mr. Fortescue, the Vicar of Bubbenhall, speaking of the good character of the defendant, and offering, if desired, to attend and give evidence in his favour.—At this point the magistrates decided to proceed with the second charge against the defendant of selling brandy which contained 7 per cent. more water than was allowed by law.—The analyst's certificate was sworn to. The facts were the same. At the conclusion the Bench said they could not get over the fact that the spirits were in a fully-licensed house, and they were of opinion that defendant was bound to sell spirits if he had them. They would inflict a fine of £1 and costs in each case.—The combined costs amounted to a guinea. The licence was not endorsed.

### THE SUBSTITUTION EVIL.

In the High Court of Justice on June 19, before Mr. Justice Chitty, the case of *Colman v. Savage* was heard.

This was a motion on behalf of the plaintiffs in an action brought by the well-known firm of mustard manufacturers, for an injunction to restrain the defendant, Charles Savage, carrying on business as a grocer at 216, 218, and 220, Kennington-park-road, from selling or offering for sale or passing off as Colman's mustard any mustard not of the plaintiff's manufacture.

Mr. Sebastian appeared in support of the motion, but the defendant was not present in person or by counsel, neither had he entered any appearance, though Mr. Sebastian stated that the defendant was willing to submit to a perpetual injunction.

Under the circumstances, his Lordship held he could not grant a consent order, and Mr. Sebastian, therefore, opened the case, and asked for an interlocutory order. He produced an affidavit of a gentleman, who, being in the habit of using Colman's mustard, went to the defendant's shop for some, and was supplied with a tin got up in imitation of the plaintiff's tins, but bearing Savage's name, and was told that it was mustard put up by Colman's specially for the defendant, and so marked for the purpose of advertising Savage. But it was proved that Colmans had never supplied the defendant with any mustard so put up, and there was also the evidence of an employee that the mustard so sold by the defendant was not Colman's mustard at all.

His Lordship considered it a strong case, and granted an interim injunction in terms of the notice of motion, adding that if the defendant would enter an appearance during the week and comply with the usual formalities the parties might have an order for a perpetual injunction drawn up, and so conclude the matter on such terms as might be arranged.

### ARROWROOT, BUTTER, MARGARINE.

At Ashford, last week, W. G. Smith, grocer, Boughton Aluph, was summoned for selling adulterated arrowroot and butter, and for selling margarine which was not labelled as such.—P. C. Potter proved the purchase of a quarter of a pound of arrowroot for 5d. and one pound of "cheap butter" for 10d. Upon being told that the articles were required for the purpose of analysis defendant said to the constable, "It is very unfortunate. This morning there were several pieces of butter lying about on the bench and I knocked them all together because there should not be so many pieces; amongst them there might be some margarine." To Superintendent Wenham he made a similar statement, saying that he had a little margarine left and he placed it on the 10d. butter, and the constable might have got some of it. In the case of the arrowroot the public analyst certified that it consisted of *tous les mois* starch, and added on the certificate that there was no objection to its sale under its proper name, but it should not be sold as arrowroot. The butter was certified to consist of equal parts of butter and foreign fat.—Mr. J. Bannon defended, and pleaded not guilty in each case. With regard to the arrowroot, he submitted the case was exactly similar in circumstances to one heard in the Ashford

Court last month, in which the prosecutor failed. Mr. Bannon quoted the report of the case published in the *Kentish Express*, and added that the article sold by his client was Indian arrowroot; it was supposed to be the best, and was warranted to be genuine. As to the other cases Mr. Bannon objected to two summonses being taken with regard to the sale of the butter. If his client was charged with selling adulterated butter, then, he contended, he could not be charged with selling margarine without having it labelled as such. He also urged that his client informed the police at the time of the sale that the article was a mixture, and that the police ought then to have stated that they wanted pure butter.—Superintendent Wenham replied that the statement was made by defendant after the sale had been completed.—The Bench dismissed the arrowroot and margarine cases, and in the other defendant was fined 40s. and 10s. 8d. costs, the Chairman remarking that the Bench felt that the butter was very much adulterated.

### ADULTERATION IN AUSTRALIA.

An important report containing the result of the examination of twenty samples of milk collected by the Bureau of Agriculture has been made by Mr. S. S. Dougall. Mr. Dougall reports taking as the standard of the examination 11·5 per cent. of solids, which he described as a low standard. On this basis, out of the twenty samples only six were found to be genuine. Mr. Dougall, commenting upon this result, remarked that "70 per cent. of the milk sold at present to the public is not what it is represented to be." It is also pointed out that as many dairies are dependent on wells for the water, and many of these wells are contaminated, there is great danger that the adulteration may be the means of disseminating enteric diseases.

### RESTAURANT MILK.

At Leeds, on May 29, Andrew Miller, 176, Hunslet-lane, Leeds, restaurant keeper, was charged with selling new milk which Mr. Fairley, the city analyst, certified to contain 11 per cent. of added water and 29 per cent. of skimmed milk. Inspector Walker purchased a sample for analysis on April 27, with the above result. Defendant pleaded not guilty, and said he was in possession of certain information respecting the actions of the farmer who supplied the milk. Their worship said the public must be protected from the double form of fraud, and fined him 20s. including costs. Inspector Walker prosecuted.

### THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 298.)

### THE FLASH POINT QUESTION IN ENGLAND AND GERMANY.

One should think that the question of raising the flash point could be solved quickly and definitely if the whole of Europe would combine against America, and if an International Convention would fix the flash point at 104·0° F. (Abel), or still higher. A single country, especially when it is small, will probably be powerless against the coming world-monopoly of Pennsylvania-Baku. It is true that at present safe oils of a flash point of 104·0° F. to 122·0° F. come to the market. These are not only introduced directly from America, but also distilled in Europe from the oil of 71·6° F. to 75·0° F., or from crude oil and semi-refined oil, as, for instance, the Kaiser oil of Korff's manufactory in Bremen.

As far as can be judged the signs of an International Convention, which in itself has its difficulties, are not specially promising in this matter. France, in consequence of the higher duty, consumes relatively little petroleum—only a third of that of Germany, and almost exclusively oil with a higher test than England. I consider the burning point required by law to be 77·0° F. to 86·0° F. (Abel test). A considerable quantity of its petroleum is manufactured in some ports from crude petroleum or semi-refined petroleum. But this does not hinder the fact that a number of accidents, for



instance, in Paris, is still very high in recent years—about 24 per cent., according to the information given by Steuart.

In Germany it seems that the authorities evidently hold the opinion that the number of accidents caused by petroleum is not large enough to cause them to raise the legal (Abel) test of  $69.8^{\circ}$  F. However, the Royal Commission for Standard Measures has, in 1893, published some advice about the construction and treatment of lamps analogous with those which had been published by the Metropolitan Board in London in 1885 and later. By this publication it is, of course, acknowledged that an official interference in this matter is certainly not superfluous. I will come back to the very instructive history of the introduction of the test of  $69.8^{\circ}$  F. (Abel) in Germany. It appears to me to be a mistake, for several reasons. Lately, in England, people appear to be seeking for a solution of the question in a different direction, by means of a law for lamps, because it has been recognised that the number of accidents is far too great.

#### THE QUESTION OF FLASH POINT IN ENGLAND.

(1.) THE ABEL-REDWOOD REPORT.—In England very conflicting opinions have been published on this question. The English Government (which for itself in the War Department requires an oil of  $105.0^{\circ}$  F., Abel test) has received a report by the Chief Inspector of Explosives, Majendie, containing one drawn out on his request by Sir F. Abel and Mr. Boverton Redwood. (*Report on Accidents with Mineral Oil Lamps*. Eyre and Spottiswoode, London, 1890.) In this report these two chemists seek to solve the question in quite a different direction. They, as well as Majendie, wish to regulate the construction of lamps by a special law. They start from the idea that it is proved that the accidents originate far more from the primitive and faulty construction of the lamps than from a too low flash point of the oil. This report of Abel and Redwood will now be considered a little closer; it will make a peculiar impression on most scientists who have occupied themselves with the question of the flash point. It is, as already mentioned, supposed as self-evident that only the construction of the lamps is bad and primitive, and that these alone are the cause of the large number of accidents. This is already expressed by the title, "Accidents with Mineral Oil Lamps," instead of "Accidents with Mineral Oil." The question is conceived as if, one would say, given an oil which even at  $73^{\circ}$  F. develops a noticeable quantity of inflammable vapours, it is required to find the lamps suitable for it. This peculiar one-sided standpoint, this turning upside-down of the question, is still better shown in two or three places where one finds arguments, if these quotations can be called so, why it is safer to use oil with a low flash point than oil with a higher test—quotations to which I soon will return.

The report begins by showing that many of the lamp explosions must be ascribed not to the oil, but to the upsetting or falling of lamps; not much is added. It is strange that it is not shown—which certainly should have been done—that these accidents caused by the upsetting or falling of the lamps would have been avoided if the oil used had had a flash point of at least  $104.0^{\circ}$  F. I again emphasise that in the Scottish cities and in well-to-do circles of society the experience with safe oils ( $104.0^{\circ}$  F. to  $122.0^{\circ}$  F. test) has taught this. About ten cases are known to me in which the upsetting of lamps charged with safe oils has not led to an inflaming of the oil; and also Dittman, of Bremen, in the discussion on my paper, referred to the experiments made by the fire brigade in Bremen; these teach the same. The defenders of a low flash point name only single cases in which oils of a higher flash point have given cause to accidents. Those, however, are very few, and for years have always been repeated, viz.,

two accidents, with Lord Romilly and that on board of the ship *Goliath*. Certainly in two of these cases it is assured that they were metal lamps, which had been (as that in the case of the *Goliath*), or could have been, strongly heated. If now, by means of the conductivity of the metal for heat, from faults of construction, the oil is heated above its flash point, then in upsetting it will be just as inflammable as ordinary oil. The protection which a safe oil offers exist no longer in this case; however, it is self-evident that by increase of the test not every accident becomes impossible. It is only asserted that by increase of the test the number of accidents is considerably lessened. Also the oil with  $104.0^{\circ}$  F. to  $122.0^{\circ}$  F. test remains easily inflammable, if compared with the vegetable oil used formerly.

The report treats further of lamp explosions. On page 4 it is said: "There are, however, numerous cases of accidents which have been undoubtedly due to the occurrence of explosions in lamps, and our experiments have enabled us to arrive at the following conclusions with respect to the causes of such explosions." According to the already mentioned opinion of the Royal German Commission for Standard Measures the number of these explosions, however, is very small, at the highest 1 per cent. Abel and Redwood, on pages 18 to 19, speak of "causes of such explosions." Now, everyone will agree that these causes of explosions can be minimised considerably by rational construction of lamps, if only in those cases the lamps are also well treated and controlled; but at the same time one will consider it to be very strange that Abel and Redwood show not by a single word that all these causes of accidents can be done away with far better and more definitely by raising the flash-point of the oil to, for instance,  $104.0^{\circ}$  F.

Now, Abel and Redwood set up the two assertions from which it should follow that oil with a lower test is, properly speaking, less dangerous than oil with a higher test. They say, first, "if the flashing point of the oil used be below the minimum ( $73^{\circ}$  F., Abel) fixed by law; and even if it be above the point, or a little above it, vapour will be given off comparatively freely, but the mixture of petroleum vapour and air formed in the upper part of the lamp will *probably* be feebly explosive in consequence of the presence of an excess of the vapour. On the other hand, if the flashing point of the oil be *comparatively high*, the vapour will be less readily or copiously produced, and the mixture of vapour and air *may be more* violently explosive, because the proportion of the former to the latter is *likely to be* lower and nearer that demanded for the production of a powerfully explosive mixture."

The uncertainty in the expression in the places emphasised by me shows that a conjecture as to what might occur in certain cases is here given value to, rather than a firmly established general fact. The whole passage gives the impression of uncertainty. Also the experiments which have been made after the publication of the report by two or three different parties about this question (Abel and Redwood simply give no experiments at all), teach that this way of considering the matter is worthless for oil of  $73^{\circ}$  as compared with that of  $100-110^{\circ}$ , and is of value only for naphtha. Burning lamps partly filled with oil of  $76$  to  $80^{\circ}$  F. (Abel test), more or less heated, in the inside of which after one or two hours an electric spark was produced, have all exploded. Only in a lamp filled with naphtha, the air was so completely driven out by vapour that an explosion did not take place. The conclusion, therefore, should be that one ought to burn naphtha. However, the experiments of Thörner carried out before 1890 have already proved that oils of  $75^{\circ}$  to  $82^{\circ}$  F. (Abel test), also at about these temperatures cause the formation of explosive mixture of vapours in lamps.

(To be continued.)



# YORKSHIRE RELISH.

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## CAUTION.

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**v.**

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**And take notice** that the Appeal of the Defendant Company from the above-mentioned Order was on the 31st day of March, 1896, unanimously dismissed with costs by Lords Justices Lindley, Kay, and A. L. Smith.

Dated this 1st day of April, 1896.

J. SEYMOUR SALAMAN,

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*Plaintiff's Solicitor.*



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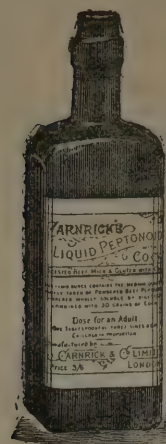
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## Food and Sanitation.

SATURDAY, JULY 4TH, 1896.

### THE AMERICAN OIL GANG.

THE thieves and plotters of murder and arson who are trying to hocus the House of Commons Select Committee on Mineral Oils into allowing them to continue to dump down in England their 40 per cent. refuse oils, the sale of which is prohibited in America, are, so a correspondent informs us, religious and philanthropic. They are amongst the most beneficent donors to the Baptist Church in America, and hold prayer meetings every Wednesday, when the head of the oil company occasionally condescends to speak to the pious. On this account our correspondent thinks we should honour them, especially as their chief, "a pure-hearted Christian," not long ago gave 600,000 dollars to found a Chicago university. We are sorry we cannot

agree with our correspondent. 600,000 dollars is a big sum, but to the person in question it did not represent even a month's income, and, if it were 600,000 million sovereigns it would not alter our opinion. The company of which this pious person is head were convicted in court of conspiring to blow up a rival's refinery, a plan accidentally failing, but not through any good intention of the conspirators. The witness and tool of the conspirators was spirited away, and was paid richly for doing nothing for several years, and when the trial came off the great men of the trust were acquitted of blame (by the judge, not the jury), and the managers of the company, though convicted, got off with a fine of 250 dollars each. At this rate crime may not actually cost so much as continuing to submit to the risk of competition, says Mr. W. M. Salter, of Philadelphia.

The Philadelphia *Ledger* said, in commenting on the sentence: "As ridiculous as anything that could be imagined." The *Erie Dispatch*: "It can afford to blow up a rival refinery every day in the year at that price." The *Springfield Republican*: "Certain it is that no wealthy criminals convicted of such a crime ever before received from a court such a mockery of justice."

It is for these infernal villains that evidence is being given to our House of Commons Committee in favour of the 73 degrees flash point. We know Anthony Mundella to be a worthy man, with a keen sense of honour, as witness his spontaneous resignation of office at the Board of Trade, and we know "Professor" Dewar to be the embodiment of scientific excellence. It is, therefore, meet and just that the public should be chastened with evidence which the *Daily Telegraph* thus summarises:—

"There seems to be as much difference of opinion among experts respecting the best kind of oil lamp as among clerics about the truest system of theology. The other day learned professors asserted before the House of Commons Petroleum Committee that lamps with glass reservoirs were preferable to all others, because they kept the liquid cool. Others gave a quite opposite opinion. The latter view was supported yesterday by Professor Dewar, who recommended the entire prohibition of the very cheap lamps sold among the poor. Those with iron reservoirs are the safest, with the burner so constructed that the oil could only escape from the wick tube. The Professor had with him specimens of that description, which, whilst alight, had been several times dropped from a height of five or six feet without any damage being done. One he lit before the Committee, and when he turned it over the only effect was that the escaping oil put the lamp out. Lack of cleanliness in removing carbonised portions of the wick was one of the commonest causes of accident. *There was no necessity for raising the flash point of petroleum.* He estimated that ten million lamps on the average were lighted every night in the United Kingdom."

It pains us to disagree with "Professor" Dewar, but we do. If the Select Committee could be induced to report for the abolition of the sale of cheap lamps and recommend some special patent safety one, there would be some plunder to be cut up, and we think we know who would get it.

### THE ADULTERATION COMMITTEE AND ITS REPORT.

As we expected, the result is practically worthless. The points agreed upon up to the present are understood to be the following:—

(a.) That in districts other than county boroughs where the local authorities fail to put the Acts in force, the County Council should, by their own officers, take samples for the purposes of the Acts.

(b.) That in connection with the sale of mixed articles it should be obligatory upon the vendor to supply the purchaser with a label setting forth that the article is mixed.

(c.) That the statement of admixture on labels should



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be in larger type than any other printed matter on the label, and should be separated from such other printed matter by blank spaces.

(d.) That, subject to the limitations indicated in the report, invoices and equivalent documents should have the force of warranties in the cases of all articles to which the Sale of Food and Drugs Acts apply.

(e.) That the Commissioners of Customs be authorised to examine and take samples of all food imports at the port of entry with a view to subsequent action as indicated in the body of the report.

(f.) That dealers who obtain supplies of food from abroad should be required to submit to the Customs guarantees of the purity given by the foreign vendor, together with evidence that they have taken measures to see that the goods are such as they are guaranteed to be.

(g.) That retailers should be empowered to refuse to sell an article otherwise than in a manufacturer's labelled tin or packet.

(h.) That the powers of Section 3 of the Sale of Food and Drugs Act Amendment Act, 1879, as to the taking of samples of milk in the transit, should be extended to other articles.

(i.) That the maximum penalty for refusal to sell a sample to the authorised officer be increased.

(j.) That the division of the sample after purchase and delivery of a portion to the vendor should be compulsory.

(k.) That samples should be divided into four instead of three parts, and that one of these parts should be at the disposal of the wholesale dealer.

(l.) That the provisions of Section 5 of the Margarine Act, 1887, as to the exemption of an employer from penalty in certain cases, and punishment of an assistant, should be extended to offences under the Sale of Food and Drugs Acts.

(m.) That in cases of doubtful adulteration the suspected article should, prior to the commencement of legal proceedings, be sent to the Government Laboratory for analysis and report.

(n.) That it should be obligatory upon the magistrates or Court to refer articles to the Government Laboratory for analysis when such course is desired by either of the parties to the case.

(o.) That a defendant who proposes to rely upon the warranty defence should be required to intimate this to the prosecutor within a reasonable time of the service of the summons.

(p.) That the time allowed for appeal to quarter sessions from divisions of local justices should be extended from three to seven days.

(q.) That any person guilty of a second offence under the Sale of Food and Drugs Acts be liable to a penalty of £5, and that in respect of the third or subsequent offences under these Acts and the Margarine Act, 1887, the punishment of imprisonment without the option of

a fine may be inflicted at the discretion of the magistrates or Court.

(r.) That magistrates should be authorised to make orders at their discretion requiring a person convicted of offences under the Acts to publish a notification of his conviction in the public press of the locality where the offence occurred.

(s.) That the definition of the word "food," as used in the Acts, should be amended so as to include expressly all articles intended to enter into or be used in the preparation or flavouring of food.

(t.) That a scientific authority should be constituted who should act as a court of reference upon scientific questions arising under the Acts, and who should be empowered, at their discretion, to prescribe standards and limits of the quality and purity of food.

(u.) That candidates for appointment as public analyst should be required to produce evidence that they possess the requisite knowledge of analytical chemistry in the shape of a diploma, or certificate, given in respect of such knowledge by a recognised school of chemistry or scientific examining body: and that, in the case of candidates other than duly registered medical practitioners, specific tests of the requisite knowledge of microscopy and the bearing of adulteration upon health should be prescribed.

(v.) That the remuneration proposed to be given to a public analyst should be subject to the approval of the central authority.

All these recommendations are mere waste of words, without the real thing wanted. Adulteration can never be dealt with properly unless there be a compulsory Act enforced by trained travelling inspectors, and Somerset House must have nothing to say or do with food analysis.

## TINNED FOOD AND THE LONDON CHAMBER OF COMMERCE.

THE following case is a sinister object lesson on the recent secret meeting of the preserved food section of the London Chamber of Commerce, about which we wrote on June 13th.

At Thames Police-court, Joseph Fells, an eating-house keeper, of 188, Whitechapel-road, appeared to answer two adjourned summonses for having in his possession a quantity of unsound food intended for the use of man.—Mr. Muir prosecuted on behalf of the Mile-End Vestry, and Mr. Grain defended.—The evidence for the prosecution showed that Dr. Taylor, medical officer of health, and Mr. Twaites, sanitary inspector, visited the defendant's premises. The goods, which were in tins, were seized in a back intermediate space, and close to that was a boiler for steam cooking. There were also three coppers, in one of which was a quantity of soup. They started sorting out the tins at a quarter past ten, and worked continuously until half-past three, by which time about three-quarters of the entire stock had been loaded on the defendant's van and a vehicle belonging to the vestry. Altogether about two tons, or 1,529 tins, were seized. The shop, among other things, was obviously intended for the sale of soups.—Mr. W. C. Young, analytical chemist, said the description of the beef showed that it must have been absolutely putrid, and would, doubtless, contain virulent poison. It would be quite unfit for human food. The effect of cooking the meat would be to remove the offensive odour, but would not remove the poison. Such food could be cooked and be made quite palatable. If boiled in soup, by the addition of spices, the remaining offensive odour would be completely masked. The tomatoes and apricots were fermented, and he did not think the decomposition could have gone far. They might not have been unfit for food. The lobster was very unwholesome and unfit for food.—By Mr. Grain: It was difficult to tell whether the contents of a tin were sound or unsound without it



being opened. He had not seen any portion of the seizure. The witness knew that sales of damaged tins continually took place at the Commercial Sale-rooms.—Mr. Twaites, recalled, said about a dozen tins were opened in the shop and seven or eight in the magistrate's presence. To the best of his belief all the latter were bad. The remainder were not opened, but put into the furnace and destroyed.—For the defence, Mr. Grain said up to May, 1895, the defendant had an office at Monument-chambers, and afterwards removed to more commodious premises. For some 25 years Mr. Fell had carried on a restaurant for cheap food at Whitechapel-road. It was at the defendant's own request that the whole facts were brought before the court, and evidence would be called showing that the two boilers spoken about had not been used for the last 17 years, and were placed there when the premises were held by General Booth. If there was the slightest fault about any tin it was not used. The defendant took no active part in the cooking, but was known as a large dealer in tinned goods. During the last half-year he had bought goods amounting to nearly £10,000, and he should show they were a recognised article of commerce. The reason why there were such a number of tins on the premises was that the defendant had no other place in which he could warehouse small lots.—Mr. Mead, interposing, said he regretted making an *ex parte* order for the destruction of the goods, as the matter was not an urgent one.—Mr. Grain, continuing, said all the tins, with the exception of those opened, might have been improperly destroyed. The tins were not there for food or for the preparation of food, and he asked that the summonses should be dismissed.—At this stage Mr. Mead adjourned the case.

### TINNED MEAT POISONING.

TINNED meats have of late gained such a dangerous reputation that it seems almost hopeless to ask fair play for them from the average newspaper. Last week a paragraph went the round of the Press in which it was stated that a Mr. Collister, his wife, and family, of Port St. Mary, had been partaking of tinned meat for dinner, and were all laid up from the effects of poison, etc. Now, the facts are simply that instead of partaking of the alleged tinned meat they dined on roast beef. Neither Mr. Collister nor any member of his family had tasted tinned meat for months. The illness from which he and family have been attacked was an ordinary form of dysentery. The lie, however, has a week's start, and the truth will never overtake it.

### COPPER IN VEGETABLES.

IN the recent case as to the sale of peas preserved by the copper process a good deal was heard of Professor Lehmann's investigations and methods of analysing to discover the presence of copper, *The Grocer* says. The question of whether the use of copper is or is not permissible is not yet finally settled, and the very latest scientific evidence does not tell in favour of forbidding such a mode of preserving peas. People who are quite ignorant of the subject may sometimes have been horrified at the very suggestion that a metallic substance like copper should be introduced into their food. These worthy persons may be interested to learn that copper exists in vegetables in their natural state, and that a distinguished analyst has found more copper in peas in their natural state than is used for the purpose of preserving the peas by the process under discussion. In the *Chemiker Zeitung*, Dr. Victor Vedral questions the accuracy of Professor Lehmann's method for determining the amount of copper; and our contemporary the *Pharmaceutical Journal* thinks the Vedral analyses worthy of attention in view of the discrepancies in results which not unfrequently occur in cases under the Food and Drugs

Act. Taking for example Vedral's results as to the amount of copper in natural peas, he finds 90 milligrammes and 150 milligrammes per kilo as the minimum and maximum amounts, or, in other words, 0.9 and 1.5 per 10,000, the last figure in many cases representing more than the amount of copper which is used to preserve artificially the colour of green peas. The following results showing the amount of copper found in various alimentary substances have been obtained:—

|                                          | Part of Metallic Copper. |    | Parts of the Substance. |
|------------------------------------------|--------------------------|----|-------------------------|
| Oysters—                                 |                          |    |                         |
| Portuguese ... ..                        | I                        | in | 3,400                   |
| Whitstable ... ..                        | I                        | „  | 5,500                   |
| Dutch ... ..                             | I                        | „  | 5,500                   |
| Plymouth ... ..                          | I                        | „  | 3,300                   |
| Cocoa—                                   |                          |    |                         |
| Pure cocoa (free from husk)              | I                        | „  | 21,000                  |
| Cocoa containing sugar and starch ... .. | I                        | „  | 17,000                  |
| Cocoa containing sugar and starch ... .. | I                        | „  | 34,000                  |

Analysing preserved peas (in which copper had been used) Vedral found copper present in quantities varying from one part copper in 6,930 parts of preserved peas, down to one part copper in 17,500 parts of peas. These figures, put in another way, mean that in 10,000 parts of preserved peas there was 1.44 part of copper in the first case, and 0.57 part in the second. By way of comparison we may add Vedral's figures as to the amount of copper he found by his method in various vegetable substances in their natural state:—

|                     | Parts of copper per 10,000. |      |
|---------------------|-----------------------------|------|
|                     | Min.                        | Max. |
| Winter wheat ... .. | 2.5                         | 8.6  |
| Summer wheat ... .. | 2.5                         | 3.0  |
| Barley ... ..       | 0.1                         | 0.9  |
| Linseed ... ..      | 1.4                         | 1.9  |
| Peas ... ..         | 0.9                         | 1.5  |
| Mustard seed ... .. | 0.9                         | 1.0  |

So that according to Vedral there is more copper naturally present in many vegetable substances than is found in some brands of preserved peas to which it has been added to preserve their natural colour.

### THE MANSION HOUSE COUNCIL ON THE DWELLINGS OF THE POOR AND LORD SALISBURY.

WE notice that this body has the Lord Mayor for its president, and for its vice-presidents the Archbishop of Canterbury, Cardinal Vaughan, the Marquis of Salisbury, and the Chief Rabbi. The Council congratulates Londoners on the progress which has been made, but, in an area so enormous it is not extraordinary that it should, nevertheless, have been able to call the attention of the various authorities "to thousands of definite cases of insanitation." We suppose that, in view of the exposures of our insanitary Premier and his slum property, the Council will ask Lord Salisbury to resign, or his lordship may consider it hardly decent that he should pose as a sanitarian.

### WARRIORS AND TEA.

THE "guinea-pig" nuisance, and its artful way of gulling the public into putting money into the pockets of this or the other impecunious or grasping Lord, Sir, Colonel, and the like, has reached an intolerable pass, and the latest guinea-pig, Lord Roberts, is likely to be made squeal. The circumstance that Lord Roberts is a director of the gigantic tea company that has been formed to buy the business of Sir John Muir is to be made the subject of a question in the House of Commons. The impression is that Lord Roberts cannot hold his present military position and be a director of City companies at the same time. If he can, he ought not to be allowed such pranks.



## TOMATOES AND CANCER.

WHOEVER was responsible for the rubbish about tomatoes causing cancer has been very successful in widely disseminating that nonsense. Dr. Sidney A. Bontor writes to the *British Medical Journal*:—"I am constantly being asked by my patients whether tomatoes are injurious or likely to produce cancer; the grounds for fears in this connection being based upon an announcement supposed to have been made in the out-patient department of the Cancer Hospital, warning patients against this vegetable. Will you very kindly inform me whether anything is known against them, and whether this announcement ever was made in the Cancer Hospital?"

We are informed by Mr. Bowreman Jessett that such an opinion has never been expressed by any of the staff of the Cancer Hospital. The committee have constantly received letters upon the same subject, and the emphatic opinion of the medical staff of the hospital is that there is no ground whatever for supposing that the eating of tomatoes predisposes to cancer. The cultivation and the use of tomatoes are steadily growing, and it would be a pity were such an unwarrantable belief to spread further and injure a profitable industry.

## THE WORST CASE IN CHESHIRE.

THIS was the description given of a milk adulteration prosecution at a police-court, on Tuesday, by the County Council Inspector under the Food and Drugs Act. A milk seller in the district was summoned for selling a pint of milk which contained 30 per cent. of added water. The inspector's assistant was served with a pint of milk from a mug on the shop counter. According to his evidence the defendant did not tell him he was selling milk and water, and he did not see any label on the mug. When the inspector afterwards entered the shop the defendant drew his attention to a label on which was printed the words, "This is sold as a mixture of milk and water." This had evidently been adopted as a precaution against the visits of the inspector. The label could scarcely be seen by any purchaser walking up to the counter. The bench considered it a bad case, and fined defendant 20s. and costs. Alderman Beeley characterised the label business as a fraud on the public. The purchaser asked for milk, and not milk and water. Children, he said, were fed upon milk, and they had a right to have pure milk, and had no business to be defrauded by a little petty label like that, which no one could see. Alderman Beeley has more common sense than Coleridge, C.J., possessed.

## THE HOUSE OF COMMONS AND "EXPERT" WITNESSES.

ONE of the most trying tasks given the average Member of Parliament is that of estimating the value of expert evidence, although to those in the know it is the easiest thing in the world. Almost every committee is fated to be blessed with evidence from the "Cordite Scientists" and Sir Frederick Bramwell. Sometimes the trio turn up, at other times it is only Abel or Dewar, but whether they appear singly or *en bloc*, the result is the same. They paralyse committees, and leave the average M.P. mentally flattened out. There be those who regard the "Expert" as a stalwart American regarded Indians—as pizen to be wiped off the face of the earth wherever found—but such drastic measures are not really necessary. The toad, although Shakespeare was wrong in saying he bears a priceless jewel in his head, is very useful, especially about a greenhouse, and even the "Expert Witness" may have his uses if only to point a moral or adorn a tale. He is valuable as evidence of what science plus indurated cuticle can do for the imagination, and in occasional doses he is as useful as, say a Carter's Little

Liver Pill. He relieves the monotony of a dreary sitting, and all the M.P. need do is to ever be guided by the golden rule. If you are on a committee on any question you will be sure to hear Dewar, Abel, or Bramwell. Listen to them courteously or go to sleep during their evidence—it really doesn't matter which course you pursue, but note on which side their evidence is given, and when you come to the report stage be adamant in opposing everything they have advocated. This is, of course, assuming that you have the public welfare at heart, which is, of course, the first consideration with every M.P., Resignation Anthony Mundella included, of course.

## COCOA BUTTER.

SIR H. VINCENT asked the Chancellor of the Exchequer, on June 26, if, having regard to the fact that inquiries instituted by the Secretary to the Treasury had proved that considerable quantities of a dutiable article—namely, cocoa—were being imported from Germany and Holland duty free, disguised as cocoa butter, and that the Revenue was thereby prejudiced, as well as British trade and labour, he would introduce such amendment as might be necessary in the Finance Bill so as to put Britisher and foreigner on the same footing.

The Chancellor of the Exchequer: This matter affects very few persons and a very small amount of revenue, but I think an amendment of the law should be made, if it can be done without the expenditure of a disproportionate amount of time.

## THE SUBSTITUTION EVIL.

THE latest victims of this form of supposed trade smartness are Messrs. J. and J. Colman, of mustard fame.

In the Chancery Division of the High Court, before Mr. Justice Chitty, Mr. Sebastian moved, on behalf of Messrs. J. and J. Colman, for an injunction against Mr. Charles Savage, of Kennington Park-road, from representing any mustard not of the plaintiff's manufacture as Colman's mustard, and from selling or supplying any mustard in response to orders for Colman's mustard not of the plaintiff's manufacture. Counsel said the defendant had signed terms for the final disposal of the action, including a perpetual injunction, an apology, and costs. The defendant had been in the habit of selling mustard in tins similar in appearance to those of plaintiffs; he saying, when asked if it was Colman's mustard, that it was, and that it was made up by the plaintiffs specially for him. There being some question as to the necessity for the defendant's appearance, it was arranged that an interlocutory injunction should at present be taken with liberty to apply.

## AN AUSTRALIAN RIVAL TO W. T. STEAD AND THE MATTEI CANCER CURE IMPOSTURE.

JOSEPH ALFRED DAVIS was convicted recently at the criminal sittings at Melbourne, Australia, before Mr. Justice Hood, for causing the death of two persons who had gone to him for treatment. In passing sentence, the judge said that Davis, without having the slightest knowledge of anatomy, had burned a hole through the abdominal wall in order to apply an ointment containing corrosive sublimate—an old remedy to external cancer, but quite inapplicable for internal cancer. The man was either inconceivably ignorant or rash to the verge of insanity. Davis was sentenced to six months' imprisonment on each charge, the sentences to be concurrent.

They manage these things better in Australia. Stead is still at liberty, for the Mattei imposture is not yet dead.



## THE GLAMORGAN ANALYST ON ADULTERATION.

MR. C. A. SEYLER, analyst for the Glamorgan County Council, reports that during the past quarter he has analysed 223 samples of food, drugs, etc. These included seventeen samples of butter, the whole of which were free from foreign fat, but eight contained a considerable amount of boric acid or preservatives containing that substance, being 47 per cent. of the whole number. Of seventeen samples of lard which he examined, three contained respectively 15, 16, and 18 per cent. of beef stearine. This addition, says the analyst, appears to be made in this country to the crude lards imported from America (which are very fluid) in order to bring them up to the required consistency of real British and Irish lards. None of the samples contained cottonseed oil, an addition which appears to be now obsolete. Of four samples of baking and egg powders, two contained alum in large quantities. Of the spices, only the gingers required comment. The results of his examination of two of the specimens led him to believe that although in the lump state, and not ground to powder, they had been exhausted in some way so as to render them very inferior. He had, however, hesitated to condemn them without some information as to whether any legitimate process of washing would account for the abnormal results. Of the samples of mustard, one contained an admixture of 25 per cent. of flour. All the samples of drugs were of good quality, with the exception of those of beeswax. Mr. Seyler adds:—"It appears that there is very little genuine beeswax on the market. None of the samples submitted to me were genuine."

## DEATH IN THE FEEDING-BOTTLE.

THE Medical Officer of Blackburn, Dr. Wheatley, in his annual report, traces the excessive infantile mortality from diarrhoea to improper feeding, and condemns the use of old feeding-bottles with a long tube as criminal neglect of children's health. He examined half-an-inch of rubber tubing after it was cleansed in the ordinary way, and estimates that it contained a million and a-quarter of micro-organisms. The report adds that female factory-workers, being sent to the mill immediately on leaving school, have no opportunity of learning how to bring up children properly, and are almost entirely ignorant of domestic work.

## TINNED MEATS.

THE tin can has found a champion in a Mr. F. N. Barrett, editor of the *American Grocer*, who says:—

"In 1807 a Frenchman named Appert brought to the attention of the French Government 'a simple and inexpensive process of keeping fresh articles of animal and vegetable food.' To him belongs the credit of demonstrating the practicability of a theory discussed, and, to some extent, the basis of experiments by others. His study of the subject led him to the conviction 'that fire is everywhere the principal agent either in the natural or the artificial preservation of vegetable and animal substances. It had been proven over and over again that heat destroyed the agent of putrefaction.' Appert used glass bottles in which to preserve food. The success of his process largely depended upon the care used in corking. The enclosed article was then subjected to the action of 'the boiling water in a water bath for a greater or less length of time, according to the nature of the substance,' and in a manner described by himself in various recipes. Although Appert's discovery has come into general use, and over a thousand million cans of food are annually preserved, there have been no changes made in the process, the experience of seventy-five years demonstrating that his method was perfect, and, up to the present, the best and most satisfactory way of preserving food in its natural state.

"There is now being introduced in America a new style of package, made either of glass or tin and hermetically sealed by the vacuum process, a patented invention in successful operation in Europe. The goods to be preserved are placed in glass jars or tin cans, around the open top of which is a close-fitting rubber band upon which the metal top rests

The filled jars are placed in an iron retort and the air removed by a pump until a vacuum is produced. As the air is removed, the tops of the jars are lifted, thus causing whatever air is in the jars to pass off. When the vacuum is secured, air is suddenly let into the retort, the pressure of which closes the lids and holds them as guardians of the enclosed article, faithful to their trust, until the cover is punctured, when it is readily removed.

"Just how or where it came about that tin plates came into use for making tin cans for preserving food, we cannot say. During the American Civil War, 1861-1865, an enormous demand sprang up for preserved food, and the 'tin can' became familiar throughout the country. Prior to that time, canned goods occupied an insignificant place in the commercial world. Now they are in common use in all countries, but most largely consumed and most extensively prepared in the United States. Along the Atlantic coast from the Gulf of St. Lawrence, south to the borders of North Carolina; on the Gulf of Mexico and on the Pacific coast from the northern boundary of Mexico to the territory of Alaska; in the states of Ohio, Indiana, Illinois, Michigan, Iowa, Kansas, and Missouri—are more than one thousand canning factories. In these establishments almost every variety of fresh meat, fish, fowl, fruits, and vegetables is preserved in tin cans.

"Tin cans are now made from what are technically called Bessemer steel plates, made by rolling down Bessemer steel billets into 14×20 sheets, weighing 90 lbs., 95 lbs., 100 lbs., and 106 lbs. per 112 sheets. These sheets are then placed in acid and pickled in order to remove all dirt, scales, or grease. They are then coated with pure tin by the acid process, the cheapest process known to the tin-plate maker. Some are made by the palm-oil process, which is decidedly the safer and better. I regret that within recent years light-weight plates made by the acid process have come into general use, as the result of excessive competition between packers of canned goods.

"We will now consider some of the objections brought against food preserved in tin packages. The most important are, that the natural acids of the articles preserved act upon the metal surface, forming metallic salts or compounds; that salicylic acid and other preservatives, together with chemical substances and compounds, are used to affect colour or impart flavour. To all of these charges the canning industry must plead guilty, but only in the same sense that a physician would admit the use of strychnine and the most violent remedies. The canner in order to please the eye, which sustains a very capricious relation to the palate, bleaches corn, and in order to gratify the idiosyncrasies of individuals adds artificial sweetening agents. The infinitesimal quantity of any metallic salts present in a tin of food, whether by design or accident, is not prejudicial to the health of the consumer. This is best proved by the fact that while billions of tins of food have been consumed, there is not on record a well-authenticated case of poisoning from use of canned food. During the several years that Dr. Cyrus Edson was with the Health Department, there were many reports of poisoning from the use of tinned food, all of which were investigated. In a letter dated May 6, 1888, Dr. Edson says:—

"Since my connection with this department I have not received a single complaint against canned goods which careful investigation proved well founded. I will put it even stronger: I have never seen a single case of alleged canned goods poisoning which careful investigation did not completely refute. I do not believe that preserving food in hermetically sealed tins in any way renders it less wholesome than it otherwise would be, provided, of course, that the preserving is properly done."

"Probably no severer tests could be applied than were made by General Greely in his expedition toward the North Pole, and by General Walseley in his campaign under the equator. General Greely says:—

"You ask me to state the effects of freezing upon canned fruits and vegetables, especially as regards the texture and flavour of tomatoes, corn, etc. Apples, peaches, pears, rhubarb, green peas, green corn, onions, potatoes, and tomatoes were all subject to extreme temperatures (over 60 degrees below zero) and were solid for months at a time. The second summer they thawed, the following winter froze solid again. All the articles named presented the same appearance as though freshly canned, and their flavour was as good when the last can was eaten as in the first month. It should be understood that these were first-class canned goods, and from dealers of standing and reliability. Cranberry sauce, preserved damsons, preserved peaches and fruit butters suffered certain changes, etc., which detracted somewhat from their flavour, though not materially so. Dealers in such preserves predicted that such conditions and changes would occur. I had also canned turnips,



squash, beets and carrots, as well as pineapples, cherries, grapes, clams, shrimps, and crabs, which, although not subjected to such extreme temperatures as the foregoing, yet froze and thawed repeatedly without injury. No can of any kind except a few, say half a dozen, of fruit butters, was ever burst by action of cold or heat. No illness of any kind occurred prior to our retreat, and those most inclined to canned fruits and vegetables were the healthiest and strongest of the party. I have written thus fully in answer to your letter from my conviction that the excellent quality and variety of canned provisions contributed materially to the unequalled health of my command during the two years we passed in unparalleled high latitude. The importance of good canned fruits and vegetables to parties unable to obtain the fresh articles cannot be overrated, and so I speak in no uncertain tone on the subject.

"Lord Wolseley testifies as follows:—

"I received your letter of August 11, in which you request to be furnished with my opinion as to the value of canned food as army supplies and as to the action of extremes of heat upon its quality and whether it in any way affected its condition as regards texture or flavour during the expedition to the Soudan. In reply I beg to inform you that I have called upon a military medical officer, Surgeon-Major W. Simpson Pratt, M.D., whose experience and judgment may be safely relied on, to furnish a report upon this question, and I have pleasure in subjoining his statement for your information:—

"Taking my experience in India and the late Nile Expedition, in which the test of tinned provisions was exceptionally severe from continued exposure to the powerful direct rays of the sun, I have found that tinned provisions, meat and vegetables, put up separately, or combined in the form of soups, are practically undamagable by any climatic heat, provided the following conditions are carried out: 1. Provisions to be of best quality. 2. To have received proper amount of cooking before the tin is closed. 3. To be put up 'in vacuo,' in perfectly sound, airtight tins. I believe that any failure that occurs is due to the neglect of one or all of these conditions. Given these conditions, nothing can be more admirable; failing them, nothing more deleterious. I mention this more particularly, as there is undoubtedly a large quantity of inferior and carelessly prepared tinned provisions in the market, and labels of well-known makes are unscrupulously used. I think the main fault in the cooked meat is that it is overcooked. A less amount of cooking would answer all preservative requirements, and render the meat more palatable, both cold and after further cooking. The only class of provisions that, in my experience, suffers from great heat, is that of uncooked articles, such as butter, cheese, and some forms of potted meats. Of course, once the tin is opened, the things last much longer in cold weather, and last better in hot dry weather than in moist heat. In this last case the provisions must be used immediately."

"A report was prepared by a joint committee of New York Mercantile Exchange and New York Retail Grocers' Union, September 22, 1886. This recommended that dealers should demand—first, that all packers shall use a good quality of tinplates; second, that terne plates, which have an admixture of lead in their composition, should not be used for this purpose; third, that all should be made by soldering them on the outside, and that in such soldering, and also in capping the tins, a non-acid flux (either resin, or the liquid flux known as the 'Safe Soldering Fluid') should be used; fourth, that consumers should be educated to reject swelled or otherwise spoiled tins of canned goods, which are occasionally found, just as they would a spoiled egg, decayed potato, or stale fish, which the ordinary use of their senses would enable them to do. The committee added: 'From a careful study of the canned goods business, we are satisfied that goods thus hermetically sealed while in perfect condition at the point of production are positively fresher, more wholesome and

palatable than many so-called "fresh" articles that are exposed for considerable periods of time in city markets; and that if dealers and packers will co-operate in encouraging the use of the best methods and materials, they can afford to disregard the sensational and unfounded statements concerning the unwholesomeness of canned goods which occasionally appear, and a large increase in the consumption of canned goods will naturally take place.'

"The nutritive value of canned meats and fish was demonstrated by Mr. Charles D. Woods, of the Storrs (Conn.) Experiment Station, who in a very elaborate table showed the chemical composition and fuel (food) value per pound of meats and fish. He found that canned corn beef is of greater food value than fresh lamb, veal, or mutton, but not equivalent to the better cuts of fresh beef, while superior to the round, shank, shoulder, or chuck with shoulder. Canned salmon is of greater food value than any sort of fish, except fresh salmon, and is not much behind the edible portion of that, and if compared with fresh salmon as purchased, quite as valuable, the calories of the latter being 925 against 890 for the canned salmon. Canned chicken or turkey is nearly equal to the best cuts of fresh beef; decidedly better than fresh veal; on a par with, in fact ahead of, lamb; and as good as mutton. Devilled ham has high nutritive value and is better than fresh pork. Sardines must rank high as a nutritive article of diet. Canned lobster is on a par with fresh.

"After many tests made in England, which resulted in finding very minute quantities of tin in preserved foods, Professor Atfield, who made the test, says:—'These proportions of metals are undeserving of serious notice. I question whether they represent the amount of tin we periodically wear off tin saucepans in preparing food. I recently found a trace of tin in water which had been boiled in a tin kettle.'

"It is not denied that vegetable acids act rapidly upon tin or an alloy of lead and tin when exposed to the air, therefore the contents of a can of fruit or vegetables should be removed from the can into an earthen or glass vessel as soon as opened. But there is no evidence to show that any compound of tin passed through the system daily in minute quantities is in any way injurious to health. Thomas Stevenson, M.D., Government toxicological chemist, says:—'Acute metallic poisoning by canned provisions is not known to have certainly occurred in this country, though the consumption of these goods is enormous. It is probable that chronic lead poisoning may have occurred through contamination of the canned articles, but such cases have not been recorded. Now and then cases of acute poisoning occur, traced to the use of canned meats, but there is every reason to believe that that has occurred only when the food was tainted or bad. I have been Government toxicological analyst for thirteen years, but have never met with acute metallic poisoning by canned foods.'

#### FRESH AFTER SIXTEEN YEARS IN THE CAN.

"In 1881, some boys, while bathing in the Genesee River, found in the mud and slime under an old dam a number of cans, which upon beating open were found to contain fruit and meats in a perfect state of preservation and deliciously wholesome. Upon investigation it was discovered that in 1865, or sixteen years previous, the cans along with the merchandise had been washed out from store or cellar during a great flood. They were caught in the dam on their impromptu voyage, and had survived the extremes of heat and cold through sixteen years. Some years since a can of condensed milk was examined that formed part of the stock of an army sutler twenty years previous. The contents were perfectly sweet and sound, and, with the exception of a change in colour to a creamy yellow instead of white, were just as good as freshly packed milk.

"Professor Albert H. Chester, Ph.D., of Hamilton College, says: 'In the summer of 1875, while going with a party through the woods of Northern Minnesota, some cans of

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corned beef were hidden under a stump, to be used on our return. We came back by another route, and did not use it at that time. Though some of us passed that way afterwards, it was not again thought of until the summer of 1880, when it was sought and found just as it had been left. The cans were opened and the meat eaten, being perfectly sweet and good, though exposed to the alternations of a Minnesota climate for five successive summers and winters. Glass cans would probably have been broken by freezing the first winter.

"The above facts, taken in connection with the immense orders given to American packers by the English Government for millions of pounds of canned beef for use in the torrid zone, should convince the most sceptical that food hermetically sealed in tin is more nutritious and economical for use in non-producing countries than food preserved in any other manner. It stands extremes of heat and cold is easily transported, is as palatable and nutritious as the fresh articles. No class of food is subject to such close examination and supervision as that purchased for the use of armies. Not only is attention given to the food, but a thorough inspection is made of the methods attending its preparation."

### THE EQUALITY OF CANADIAN MILK.

MR. THOMAS MACFARLANE, Chief Analyst, Inland Revenue Department, Ottawa, reports that out of 260 samples analysed there were genuine, 184; watered, 11; partly skimmed, 7; under average in total solids, 20; under average in cream, 18; under average in non-fatty solids, 20; total, 260.

"The above expressions have been more or less in use among the public analysts, but for the information of the public, and of the analysts, and in order possibly to obtain greater precision hereafter, it may be well to explain the manner in which I have made use of them in this report. In applying them to whole milk it is deemed reasonable to use the term "watered" when the "other" or "non-fatty" solids of a sample are under 8 per cent. and the butter percentage is below the average or at least not above it. When the "other solids" show the normal percentage—not under 8.5 per cent.—and a lower amount of fat than 3 per cent., it is characterised as partly skimmed. When a sample falls below 2 per cent. butter-fat the word "skimmed" would be justified, but there is no instance of this sort among this lot of samples, nor is there any case of a milk completely skimmed having been sold as whole milk. The expression "under average" has been used, as in former reports, for the purpose of indicating those samples whose adulteration cannot be pronounced upon with certainty, but which are in point of quality inferior to those marked genuine. "Under average in total solids" is the expression used when the latter fall below 12 per cent., and the sample cannot be positively characterised as "watered." When the fat ranges between 3 and 3.5 per cent., the non-fatty solids being normal, the sample is said to be "under average in cream," and when the non-fatty solids fall below 8.25 per cent. the sample is said to be "under average" so far as regards these latter constituents. Quite a number of samples have to be ranged under the last-named class, although their contents in butter-fat are high and sometimes indeed abnormally so. Rare instances occur in which the butter-fat exceeds 5 per cent. with the total solids under 8. It is difficult to account for the composition of this class of samples, unless on the theory that they are the product of diluting cream or watering very rich milk. It is worthy of remark that of the 8 samples of buttermilk tested, five were found deficient in total solids, the amount being lower than 9 per cent. of these.

### SPIRIT ADULTERATION.

At Dorking Petty Sessions, last week, Frank Stone, landlord of the Queen Inn, Upper Hale, was summoned for selling adulterated rum on May 28.—Mr. E. Jackson defended.—Mr. Cliffe, inspector to the Surrey County Council, produced a certificate showing the rum to be 41 per cent. under proof.—Mr. Jackson pleaded guilty, and said defendant took the house from a Mrs. Kenton on April 7, and the latter told him that all the spirits were as received from the brewers. He then "broke" the rum down after it had been already broken down.—Defendant, on being sworn, said he believed what Mrs. Kenton told him, and acted *bona-fide* in breaking the rum down.—Mr. Goodall, representing Messrs Simonds, brewers, of Reading, deposed as to the strength of the rum sent out.—The Chairman said defendant ought to have taken the trouble to see that the spirits were as represented by the outgoing tenant. He would be fined 40s. and costs.

### A SHERIFF WITH WATER ON THE BRAIN.

BEFORE Sheriff Campbell Smith at Dundee, on June 26, Jane Keenan or Connelly was charged with selling milk adulterated with water. The complaint set forth that on May 27, within the shop at 76, Scouringburn, by the hands of a servant, she sold to George Beveridge, Sanitary Inspector, twopence worth of milk as sweet milk, but which was not of the nature, substance, and quality of the article demanded by him, it being adulterated with water to the extent not under 11 per cent. Mr. Andrew Buchanan, solicitor, who appeared on accused's behalf, objected to the relevancy of the complaint on the ground that twopence worth of milk was not a standard measure. The complaint should have stated that she sold a pint or half a pint. Half a pint of milk would have been twopence worth, but in the complaint it was not sufficient to label twopence worth, as that was not a standard measure. His second objection to the complaint was that there was no statement of what sweet milk was. In England and Ireland the Somerset House standard was applied, but there was no provision in the Food and Drugs Act, 1875, for the Somerset House standard being taken, and a standard should be specified in the complaints. The Sheriff remarked that there was a Judiciary Court case setting aside a decision by Sheriff Cheyne, and Mr. Buchanan replied that the judges there stated that the Somerset House standard could not be taken in this Court. The Sheriff said he had held before—and he was not prepared to hold anything else now—that the presence of 11 per cent. of water was not a contravention of the Act. He required to have it proved that the milk was adulterated by water being put in. There was a case tried in that Court against a man named Gray, for two samples of milk, and it was found that the worst sample was taken from the cows in the presence of the Superintendent of Police. That sample had more than 11 per cent. of water. The Fiscal replied that his Lordship was scarcely accurate. Gray was not charged with the addition of water, but with the addition of skimmed milk to the extent of 13 per cent. The Sheriff said if it was proved that the milk was adulterated with 11 per cent. of water, that would be sufficient. With regard to the quantity sold he would like to know the practice. The Fiscal replied that it was the ordinary practice for people to buy a penny or twopence worth of milk, and it was well enough known that some milk sellers gave more and others less for a penny. The Sheriff remarked that he could not sustain the objections, because he understood that the substance of the complaint was that the person who went to buy this twopence worth of sweet milk asked for sweet milk, and got something that was not sweet milk, in so far that instead of being pure milk there was 11 per cent. of water put into it. He required evidence to show that 11 per cent. of water had been put into the milk—not that it was 11 per cent. from the Somerset House standard. It would have to be shown that it was impossible for the milk to come from the cow in that state. The case was adjourned till Thursday next for proof.

### UNSOUD FRUIT.

At North London, on June 25, Sanitary Inspector Harvey, of the Hackney Vestry, brought a cart-load (about 5 cwt.) of strawberries and several large bunches of bananas to the court, and asked for the magistrate's certificate of condemnation.—Mr. Paul Taylor went into the court-yard, and had no hesitation in condemning the rotten mass shown. The whole of the seizure was made at one shop.

### BERMONDSEY VESTRY AND ADULTERATED FOOD.

THE Committee reported that twelve articles of food and drugs had been purchased since June 1st and submitted to the Public Analyst, eight of which were found to be genuine, and proceedings were being taken against the vendors of the adulterated articles. The Committee desired to inform the Vestry that eight of the samples consisted of milk purchased on a Sunday morning, and four of such samples were found to be adulterated; the other four articles were samples of ice-cream, all of which were found to be genuine. Proceedings will also be taken against a vendor of milk for refusing to serve. The report further stated that two persons had been fined £1 and 12s. 6d. costs and £3 and 12s. 6d. costs respectively for selling milk adulterated to the extent of 7 per cent. and 10 per cent. respectively of added water.

Mr. Pridmore said that it was believed that a lot of milk sold on Sundays was adulterated.

The report was adopted.



## A VERY BAD MILK CASE.

At Luton, on June 24, George Halfpenny, of 6, Brunswick-street, Luton, was summoned by Mr. C. Wright, Inspector under the Food and Drugs Act, for selling milk deficient to the extent of 50 per cent. of fat, on May 29.—Mr. George Sell appeared for the Corporation to prosecute, and described the case as a bad one.—Alderman Oakley said as it was a Corporation prosecution the Mayor and himself would not adjudicate.—Mr. C. Wright proved purchasing a pint of new milk from the defendant's grandson for 1½d. He told him it was for analysing purposes, and divided it in the usual way. One sample had been analysed by Mr. A. E. Elkins, the public analyst, and he certified that it was deficient in fat to the extent of 50 per cent.—In reply to Mr. Higgins the witness said he was sure the lad was selling on behalf of the defendant, as the lad told him so.—The defendant said he did not know what was meant by the milk being deficient.—Mr. Wright said it was without any cream.—Frederick Peck, in the employ of the Corporation, gave evidence in corroboration of Mr. Wright.—The magistrates decided to convict, and while they were discussing the costs, the defendant said: I ain't got no money—not a farthing.—Mr. Higgins: Well, we think you have had the cream anyhow, whether you have any money or not. He would be fined £1 10s., and would also have to pay £1 1s. 6d. costs.—He was allowed a fortnight in which to pay.

## MEAT.

At Guildhall, London, on June 24, Thomas Flint, of Bloxham, near Banbury, Oxon, was summoned before Alderman Sir R. Hanson, M.P., for sending to the Central Meat Market two carcasses—a bullock and a calf—which were in a diseased condition, and totally unfit for human food.—Mr. Vickery, who prosecuted on behalf of the Commissioners of Sewers, said the defendant was a kind of general dealer. He gave the sum of 7s. 6d. for a bullock and a calf, had them killed, and sent them to London, where they were seized.—Inspector Leeson stated that on the 12th of May he saw this meat outside the shop of Mr. Manton, salesman, Central Meat Market. Noticing that it was in a shocking state, he took it to the medical officer, Dr. Saunders. The hides of such animals alone would be worth 12s.—Dr. Saunders deposed that the beef was in a wasted and emaciated condition, wet and flabby; there was an entire absence of fat. The animal must have suffered from some wasting disease. There was only half the flesh that there would have been on a healthy beast. He never saw worse veal—it was simply in a disgusting condition. It would be highly dangerous for anyone to eat such meat.—Henry Painter, farmer, Butterfield Farm, Great Barfield, said he knew the defendant as a dealer. On May 8th the witness had a steer and a calf which were in a very bad condition. He asked the defendant to give him £2 for them, but he only gave him 7s. 6d.—Mr. Vickery: Was the meat fit to send to market?—The witness: They were what we call wasters.—Sir Reginald: Do you eat wasters at Banbury?—Painter: No, sir.—Other evidence having been given, the defendant, who elected to go before a jury, was committed for trial. The alderman offered to accept bail in two sureties of £100 each.

## VINEGAR.

At Liverpool, on June 28th, Alice Bradley, who keeps a small shop at Seaforth, was summoned for selling vinegar not of the quality and substance demanded. Mr. Superintendent Cross prosecuted. Police evidence was given which proved that a sergeant of the county police bought at the defendant's shop some vinegar which, on being tested, was found to be of a very inferior quality.—Mr. Goodison: To what extent do you say the vinegar is adulterated?—Mr. Superintendent Cross: In the liquid we purchased there is no vinegar. The analyst had the sample and his certificate says, "There is only a trace of vinegar." The defendant said that she was a poor woman and kept the shop to maintain herself and her children. She bought the article from a dealer in Liverpool, and thought she got pure vinegar, which she ordered. She paid 8s. 6d. for ten gallons. The defendant protested that if the articles were adulterated, it was not by her, but by the persons who supplied her with them. Mr. Goodison said that the magistrates would give her the benefit of the doubt.

At Norwich, on June 23, Thomas W. Daniels, shopkeeper, of Cricket Ground-road, was summoned on an information which set forth that his wife sold to Shafto John Chapman a

certain article of food, to wit malt vinegar, the same being adulterated with 80 per cent. of dilute acetic acid. The Town Clerk prosecuted. The defendant pleaded guilty to the article being sold, but stated that he did not know it had been adulterated. The Town Clerk pointed out that was no defence, and defendant said if he had been in the shop he should not have sold the article as "malt vinegar," but "vinegar." He had only been business three months, and till about a fortnight ago he did not know the difference between the two articles. When he ordered the stuff he asked for vinegar. He was fined 5s. including costs.

## BUTTER ADULTERATION.

At Hampstead, on June 22, James Ward, grocer and provision merchant, of High-street, Highgate, was summoned by the St. Pancras Vestry to answer a charge of selling "butter" adulterated by the admixture of foreign fat to the extent of 80 per cent.—Mr. Ricketts, jun., solicitor, prosecuted; and Mr. Wright-Motion, solicitor, defended.—The defence was that the sample was sold as margarine, although the wrapper was not so labelled.—The Bench fined defendant 40s. and 18s. costs.

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

*(Continued from page 310.)*

Concerning the upper limit of explosiveness, there is no doubt about the possibility that in high temperatures an oil of about 71·6° F. (Abel test) may originate too much vapour for an explosion to take place, and an oil of, for instance, 78·8° F. to 86·0° F. cause the formation of a strongly explosive mixture; but here it is a question about the comparison with an oil of at least 100·4° F. to 109·4° F. (Abel test). The same attempts have proved the safety of these oils, so that they can give no explosive mixtures at the temperature which exists in Europe; this will happen only exceptionally—for example, with metal lamps of a bad construction in which the oil is heated far above the flash point.

The same point is touched again later, on page 9 in the report, when Abel and Redwood remark that metal lamps, it is true, heat the oil more than glass or porcelain lamps, but that it is not probable that this should increase the formation of an explosive mixture; "on the contrary, any increased volatilisation resulting therefrom would have the effect of increased expulsion of air from the reservoir, so that its vaporous contents would be rendered inflammable instead of explosive. A lamp intended to be used with ordinary petroleum, and having an unprotected burner, is in the safest condition when the proportion of vapour to air is considerably in excess of that required to produce an explosion." Rightly, attention has been drawn to the fact that in order to reach the safest condition one must run for a certain time through a dangerous period. Now since, according to the German Commission for Standard measures, the occurrence of real lamp explosions are rare, one does not need to stop at the "safest condition" and its assertions. With oil of 104·0° F. to 122·0° F. (Abel test) explosions are as good as excluded (in glass lamps) altogether.

In the second place, the following assertion occurs in the report of Abel and Redwood:—"Experiments have demonstrated that the burning of an oil of comparatively high flashing point is more likely to cause heating of the lamp than the use of an oil of comparatively low flashing point, in consequence of the higher temperature developed by the former, and of the greater difficulty with which some oils of that description are conveyed to the flame by the wick.



It therefore follows that safety in the use of mineral oil lamps is not to be secured simply by the employment of oils of comparatively high flashing point (or low volatility), and that the use of such oils may even, in certain cases, give rise to dangers which are small, if not entirely absent, with oils of comparatively low flashing point."

These two sentences also produce the impression, especially in the mind of a lay reader, that it should be better, properly speaking, to burn an oil with a low flash point than one with a high flash point. But if one examines the contents a little closer, one is astonished to see such things written by the pen of scientific men. It is true that with the higher hydrocarbons a similar weight possesses a little higher degree-value of heat than the lower ones, which occur a little more frequently in oil with a low flash point than in oil with a high flash point. But, first of all, this difference is very small; and secondly, the quantity of the lower hydrocarbons is inconsiderable as compared with the higher ones—6 to 8 per cent.; thirdly, the flash point proves nothing about the composition of an oil. It is therefore very possible, even highly probable, that the Standard Oil, No. 1, which is used most, possesses a higher value of heat than an oil of, for example, 104° F. to 122° F. flash point, because the standard oil contains not only naphtha but also heavier oils (about 20 per cent. of thin lubricating oils), which do not occur in many oils of 104° F. flash point, and can therefore develop more heat.

Further, the development of heat with Russian oil is *ceteris paribus*, a little greater than the American oil. Lastly, the development of heat is far more controlled by the construction of the lamps, by the higher or lower state of the wick in daily use, and the size of flame and quantity of oil burned depending on these two circumstances, than by its composition. No value can be given to this argument.

Since also here Abel and Redwood do not give their experiments, one cannot judge at all about the amount of increase of temperature. Other chemists, however, have made such experiments—W. Fox, chemist of Petroleum Association; Steuart, I. MacAdam, and later, also A. Spencer (see further, the "Report on Petroleum.") The result is that if there exists a difference of temperature of oil in the lamp in using high and low-tested oils under similar circumstances, it certainly amounts to only 1° to 2° F. Even if the difference was greater, the second sentence would not follow from this, which begins with—"it therefore follows."

However, as Steuart and MacAdam write—"Redwood agreed that a higher flash point did not mean an increased temperature in burning," and thus this point can be considered to be settled. I, however, have intentionally dwelt longer on it, because one must ask how scientific men come to accept such an unimportant argument which proves nothing? *Qui trop prouve ne prouve rien.*

Finally, in the third instance, a passage occurs in the report which can lead to a false argument. From July, 1887, until January, 1890, twenty-nine accidents had been examined by Abel and Redwood, on which they had been more minutely informed by A. Spencer. In twelve cases the oil has been examined. In six cases the flash point was from 73° to 79° F.; in six other cases, 82°, 84°, 86°, 88°, and 110° F. "Therefore, in one half of the cases in which it was possible to determine the flashing point of the oil, it was found that this was about 10° and upwards above the legal standard." This is expressed quite correctly, but, in a superficial observation, one can draw from it the conclusion that oils with a higher flash point are, properly speaking, not any safer than oils with a lower flash point. But such a conclusion is quite inadmissible. For it must be asserted that a separation is not admissible of oils above and oils below 83° (10° above the "legal point"), but that by those who

advocate an increase of the flash point, certainly at least 100° to 105° (38° to 40° C.) is required before an oil can be considered to be sufficiently safe. And that in accidents it is almost always a question of oils of 73° and a little higher, every expert of course knows. Standard oils, Nos. 1 and 2, is the American petroleum which is almost exclusively used by the lower classes in Europe. The only exception which can be made in the above-mentioned twelve cases concerns the accident with the oil of 110° F. This is the case in which Lord Romilly was killed, one of the few cases which have become known in England by which oil of above 100° F. (Abel test) gave cause to an accident.

The whole report bears the stamp of one-sidedness. If it had appeared anonymously, or if one did not know the position of Abel and Redwood, one might think it was written by the Standard Oil Company, or by persons interested in the sale of petroleum.

Differences of opinion among scientists will always remain. One can respect that of Abel and Redwood and yet not suppress the question whence it comes, that a report on the subject of accidents with mineral oil lamps (Majendie speaks expressively several times about "the causes of mineral oil lamp accidents") speaks only about lamps, and says nothing of what can be said about the oil. For the two remarks which I have treated, and from which it should follow that oil with a higher test is more dangerous than oil with a lower one, cannot be called arguments. They emphasise all the more the one-sided standpoint which the authors of the report thought they were obliged to take. And must one suppose that Abel and Redwood did not know that this Standard oil, No. 1, contains 6 to 8 per cent. of very volatile parts which are exclusively the cause of this danger?

In his writing of the 28th April, 1890, in which Majendie offers Abel and Redwood's report to the Home Secretary, he says:—"The report (of Abel and Redwood) shows that even the very limited publication (about the rules in constructing lamps) has borne substantial and practical fruit in . . . the application in a large degree to the construction of the lamps which they are now putting on the market." I may be allowed to remark here that the number of accidents proves that this so far has helped very little. London has to show an increasing number of accidents—1890, 271; 1891, 290; 1892, 378; 1893, 456. These are only fires known to the fire brigade; and besides that, "one killed per week" during the last year. Thus, in ten years the "application in a large degree" has had no noticeable result; on the contrary, the number of accidents has considerably increased. From this it follows that the cause, in a far higher degree, must be ascribed rather to the dangerous oil than to the lamps. Against this Abel and Redwood, at the conclusion of their report, say:—"On the other hand, an inspection of the character of lamps now chiefly sold among the poorer classes indicates that there is yet room for considerably further advance in this direction," that is concerning the construction of better lamps; and the remark that only a lamp law can force the "poorer classes" to buy, instead of the cheap lamps, better ones (and safe cooking apparatus), which certainly are used very much on the Continent. I admit that, in case it were possible all at once to replace all dangerous lamps by safety lamps, this would exercise a good influence; but the measures to be taken must be also extended to cooking apparatus, which are not at all mentioned in the English report. A great number of accidents (in Amsterdam and Berlin about two-fifths) is caused by apparatus which are constructed very primitively, quite open, and without closing screws. But it is difficult to imagine how one could manage to carry out strictly a lamp law. With a dangerous oil the danger would always remain; safety lamps require intelligence in their treatment which one cannot expect in uneducated people.

(To be continued.)



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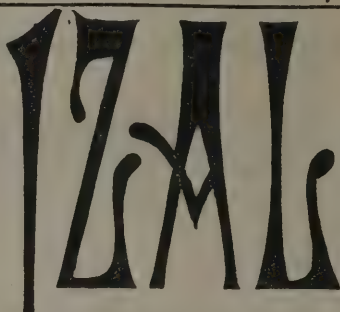
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# Food and Sanitation.

SATURDAY, JULY 11TH, 1896.

## CATSPAWS.

WHY it should be so we do not profess to be able to tell, but it is the fact, and a not very flattering one to our great British and Irish common sense, that we are always ready to take up the cudgels for foreign interests and foreign men as against native ones. In music, plain Mr. Foley, an Irishman, would have had far longer to wait for recognition than Signor Foli, although both are one and the same man. In Art,

whether it be Corot, Dorot, Erot, or any other "Rot," we must have it foreign. In rulers we do the same, and we do not kick at subsidising disgraceful, impecunious, starveling German princelets, who have wives and families living, and bestowing princesses of our Royal house in marriage upon them, blinking our eyes to the fact that they are married already, for, by a euphemism, we don't call it bigamy but "morganatic marriage." In commerce, because an American scoundrel or two have amassed by the vilest methods millions of money, the petroleum section of our London Chamber of Commerce will lie for them, and English and Scotch "experts" will prostitute science to help the villains. This kind of thing we are unable to have even ordinary patience with. Last to come forth as foreign catspaws or fetish worshippers is the Metropolitan Grocers' Association, the hon. secretary of which writes:—

"It will interest your readers to know that although we did not gain the success we desired in the Law Courts in our defence of preserved peas, we do not intend to allow the matter to rest there. On Monday week a question on this subject was put in the House of Commons, to which an answer was returned, as subjoined. It will be manifest to your readers that the Local Government Board have not taken much pains in the matter, and therefore it will be necessary to give them the evidence as to the position of the article in France. I hope that all the trade associations will send in a resolution to the Local Government Board urging the importance of stopping the harassing prosecutions of grocers for selling these preserved peas and other vegetables until the matter has been thoroughly threshed out by the proposed Board of Reference.

"Yours faithfully,

"W. COLLIS CLARK,

"Hon. Secretary.

"Metropolitan Grocers' Association,

"49 and 51, Eastcheap, E.C.,

"July 2, 1896."

"Mr. George Whiteley: I beg to ask the President of the Local Government Board whether his attention has been called to a decision given by the Deputy-Chairman of the County of London Sessions condemning preserved peas as injurious, in the preparation of which sulphate of copper is used; whether he is aware that in France the Government, after an exhausted inquiry, permits the unrestricted sale of such peas as quite harmless, and the same is the case in the United States, Denmark, and other countries; whether, as the Justices of Glasgow and Bristol have held that such peas are harmless, he will consider what steps can be taken to prevent the retail grocer being subjected to such prosecution. And whether, if satisfied that such peas are harmless, he will issue a recommendation to the local authorities to discontinue such proceedings?

"Mr. Chaplin: My attention has been drawn to the decision mentioned in the circular, but I am not in possession of any reports which have been made in France or other countries, and which have led to the unrestricted sale of peas coloured with sulphate of copper, at the rate of three grains of copper salt to one pound of peas, on the ground that peas thus coloured are quite harmless, nor have I seen the decision of the Justices of Glasgow and Bristol to which my hon. friend refers. Indeed, I am not in possession of any evidence which proves that peas coloured as described may be habitually consumed without injury to health, and under these circumstances I am unable to make the recommendation which my hon. friend suggests.

"Mr. George Whiteley: Has the right hon. gentleman had a representation from the Grocers' Association upon this matter?

"Mr. Chaplin: I am not aware of it."

We really cannot for the life of us see where any grocer has any shred of interest in this business. From



first to last it is one benefiting the foreigner and the foreigner only. Even the firms who get English grocers to sell their poisoned peas are foreigners, and for the wretched few pence per week of possible profit the grocer may make he is asked to waste his time and money resolving the Local Government Board. Faugh! the thing stinks, for the foreigner is even too mean to pay the expenses of his victim—the prosecuted English, Irish, Scotch, or Welsh grocer. We do not like the spectacle of a grocers' association being hounded into doing the work of foreigners. If the French pea growers, canners, or bottlers want to regain their privilege of poisoning the public, our grocers might at least let them do their own touting and dirty work, and, if the hon. secretary be well advised, he will let them "hoe their own row." The Grocers' Association has far better work awaiting it. There is the proprietary tea game, the co-operative humbug, cutting, short weights, and a host of far more important matters all wanting energy.

#### THE AMERICAN OIL GANG: PROFESSOR ATTFIELD'S CONDEMNATION OF THE INFAMY.

If anything could be calculated to make the very Right Honourable gentleman, Anthony J. Mundella, chairman of the Select Committee on Petroleum, feel glad that he is virtuous, impartial, and, despite his unfortunate necessitated "chuck-out"—politely called "resignation"—from the Board of Trade, a model chairman of a House of Commons Committee, it must have been the evidence of Professor Attfield. We assume that Mr. Mundella could not have been other than glad, because he has at various times taken so much money from the English people for so-called public official work that he must have a keen interest in their health, long life, and wage-earning power, and, if only for his very off-chance of a job in the next Liberal Government and the security of the salary thereunto appertaining; he must have glowed with delight at the knowledge that at last someone had the courage and sense to speak the truth, and show what it is that causes the loss of a life per day to the end that contrivers of arson and murder in America may become millionaires.

Professor Attfield first gave a statement prepared by Captain Patterson of the fires which occurred in Glasgow from 1886 to 1895, which showed that during that period there were 4,768 fires, of which 72 only were traced to the use of oil lamps. In the opinion of Captain Patterson comparatively few accidents arose from the use of mineral oil, which was to be attributed to the fact that oil with a flashing-point of over 100 deg. Fahr. had hitherto almost exclusively been burned in lamps in Glasgow. In the opinion of the Corporation no oil should be sold for burning in lamps that flashed below 100 deg. (It should be noted that the oil of the American arson and murder plotters flashes at 73 deg.)

Do we gather that Glasgow enjoys almost total immunity from lamp accidents?—Yes.

Are we to understand that there is no importation of American oil into Scotland? asked Anthony J., as question number one.—I cannot say exactly, but I am under the impression that most of the oil used in Glasgow is what is called Scotch oil, which flashes at a high point. Continuing, the witness could not say that no American oil was used in Glasgow, but he believed very little was. About the year 1860, soon after the introduction of American oil into this country, he noticed that there were many lamp accidents, and it was that which induced him to take up the subject. In his opinion, the legislation which had given a standard of 73 deg. was badly founded, and that consequently the danger to the public was as great, or indeed greater than ever. He thought that the Abel apparatus was in itself satisfactory, but the test was inadequate. Originally, and by presumably competent men, a flash-point corresponding to 100 deg. of the present test apparatus was agreed upon, and it was only reduced from that by the desire of the petroleum trade. It was reduced by Sir James Fergusson, acting on the advice of Sir Frederick (then Mr.) Abel, who he believed at the time

made an error of judgment. He agreed that the present test apparatus for getting a flash-point was a very good one. He believed that the standard of Germany was lower than this country.

How is it that they allow it to remain lower than the English if it is so dangerous? was Anthony J.'s next artful question.—I am not sufficiently acquainted with the trade in Germany to be able to answer that question, but I am of opinion, as a scientific man who has paid great attention to this matter, that no oils should be used in lamps for illuminating purposes if they give off a vapour which, mixing with the air, forms an explosive mixture at any temperature to which they are liable to be exposed.

Yet we have had witnesses to say that in Germany accidents are extremely rare!—In my judgment that statement is not well founded; there are abundance of accidents in Germany. Continuing, the Professor said his opinion was that the only hope of safety in the use of oil lamps was to determine the flash-point at 100 deg. The most important point in the construction of oil lamps was to prevent the formation of vapour in the reservoir. He had seen the reports of Professor Abel and Mr. Redwood, and of Mr. Spencer, of the London County Council, but he did not agree with all the conclusions they contained.

What would you recommend as a safe lamp?—I would recommend that lamps should be constructed upon principles that tend least to the heating of the oils. He continued that in his opinion Mr. Spencer had drawn many wrong conclusions from the results of his experiments as to temperature. His figures conveyed the impression that the rise of the temperature of the oil in lamps was about double what it really is. That arose from the fact that the room in which he made the experiments was of an unusually high temperature, caused by the large number of lamps he had burning at one time. He (the witness's) opinion was that 100 deg. Fahr. would be a reasonably safe standard. He would prefer that the reservoir of lamps should be made of strong, clear glass; that the burner should be fitted with good screws instead of bayonet points; that some non-conducting material should be used as packing between the burner and the body of the lamp, and that so long as dangerous burning oils were used the air-holes should be small and packed with wire. The burners should be constructed as simply as possible, and with as few movable parts as possible, and access to all parts of the burner should be easy. He did not agree with the elongated metal wick tubes which went right down through the lamps, because he thought they had a tendency to get heated, and so affect the temperature of the oil in the reservoir. Such long tubes he considered undesirable.

Do you believe that these oils at a low flash-point are dangerous when used with due care and precaution?—That all depends upon what is due care and precaution. I think they are dangerous to the public, because the public buy them under the name of oils—that I consider to be the initial difficulty. The public have gradually come to understand roughly what precautions should be used in burning an article called oil, and also what precautions should be used in burning spirit. My point is that if you sell the public what they call oil, which contains a lot of spirit, you are doing that which in their hands may prove a source of danger.

But is it not a fact that in ordinary households accidents very rarely happen with these lamps?—The witness said he considered that the number of accidents in the course of a year which happened from these causes was very considerable, causing loss of life and large destruction of property.

In our opinion it is a terrible loss for Italy that Anthony J. or his forbears forsook sunny Italy for England.

#### THE FOOD ADULTERATION COMMITTEE'S REFERENCE BOARD.

We are glad to find that the game of the political hack, ex-temperance spouter Russell, M.P., has been too nauseating for the Board he sought to bulldoze. He proposed that the Food Adulteration Reference Board should be nominated by the Commissioners of Inland Revenue. Persons who know the Inland Revenue Commissioners, and what those enemies of England and its trade have done for beer and spirit swindles, will be glad to know that the committee will have none of that wretched Russell stultification, and that they rejected the proposals of the ex-temperance



spouter with contempt. The board is to be nominated by the Board of Trade and be directly responsible to Parliament. The Board is to consist of the principal officer of the Government Laboratory at Somerset House, and representatives of the Local Government Board, the General Medical Council, the Institute of Chemistry, and the Pharmaceutical Society, of analysts of repute, and of representatives of the trading and manufacturing community. We want now a compulsory Act, enforced by specially-trained inspectors, and adulteration can then be really coped with. We can, however, be thankful for one small mercy—that the Committee did not swallow T. W. Russell's froth, wind and ignorance.

The Committee met again on Thursday last week, and disposed of over seventy of the remaining Clauses of the Chairman's Draft Report. A proposal was made that a standard for milk should be fixed, but this was defeated, by a large majority, and it was decided to leave all questions of food standards to the Board of Reference which it is proposed to create. The Draft Report recommends that the colouring of margarine shall be allowed, and that, with due notice to the public, it shall be permissible to mix margarine with butter. On both these points the agricultural members of the Committee will move amendments, for which there is every probability that they will secure a majority.

### THE SUBSTITUTION EVIL.

THERE is a pleasant little story current in legal "suckles" that upon one occasion the young Kekewiches addressed their maternal parent in these words: "Ma, may we have jam for tea—the Court of Appeal has upheld one of pa's judgments." Our views upon the substitution evil are so well known that we trust if an appeal be entered against the decision given below, the young Kekewiches, if there be any, may once more have the delight of revelling in jam for tea.

In the High Court of Justice, Chancery Division, before Mr. Justice Kekewich, the case of Liebig's Extract of Meat Company, Limited, v. the Chemists' Co-operative Society, Limited, and others, was heard. This was an action by the plaintiff company for an injunction to restrain the defendants from selling meat extract in wrappers similar to those used by the plaintiffs, and from passing off meat extract sold by the defendants as meat extract sold by the plaintiffs. The defendant company was incorporated in April, 1895, and subsequently acquired several businesses in and about Bradford, Yorkshire, including Goodall's Drug Stores and the Liebig Medicated Wine Company, Limited. In the course of their business they sold meat extract. The plaintiffs' case was that they were generally known as the "Liebig Company," and that when customers went to the defendant company's shops and asked for the "Liebig Company's" extract of meat or beef they were supplied with the defendants' article and not the plaintiffs', though the customers intended to buy the plaintiffs' "Liebig" or "Liebig Company's" extract.

Mr. Warrington, Q.C., and Mr. C. E. E. Jenkins appeared for the plaintiffs; and Mr. Bramwell Davis, Q.C., and Mr. Martelli for the defendants.

Mr. Justice Kekewich held, upon the evidence, that the defendants' wrappers were so like the plaintiffs' as to be calculated to deceive; that it had been proved beyond dispute that the extract sold by the plaintiffs was known as "Liebig's," "Liebig Company's Extract," or simply as "Company's Extract"; and that people had been supplied by the defendants with their article when the plaintiffs' article was, in fact, asked for. The plaintiffs were therefore entitled to an injunction on both grounds; also to damages and the delivery up of the wrappers in the defendants' possession, and costs.

In the kitchen as a flavourer for soups, etc., Liebig Company's Extract is a very useful article, and its

quality is unimpeachable. It would be intolerable were the law to permit others to reap the advantage of the business acumen and large expenditure devoted by the Liebig Company to making the article world known. If firms want to sell meat extracts let their sale be on their own merit, not on a similarity in name. One who has suffered most from the substitution evil is Mr. Thomas Keating, and in the Scotch Court of Session on June 30 a settlement was effected of the action—before Lord Pearson—at the instance of Thomas Keating, London, against Alexander Malcolm, chemist, 124, Victoria-road, Dundee. Pursuer's firm sought interdict against respondent selling insect powder not manufactured by Keating in implement of requests for Keating's. Respondent consented to decree of declarator and interdict and to decree for £5 damages and five guineas expenses; and pursuer accepted this, and the case was taken out of Court in terms of the joint minute.

### MR. T. J. LIPTON PRESENTED AT COURT.

AT Aldershot Police-court, Thomas Johnson Lipton, Union-street, Aldershot, was summoned for selling condensed milk which was not of the nature, substance, and quality demanded. Police-sergeant Squibb stated that he bought a tin of condensed milk at the defendant's shop for 2½d. He told the person who served him what the condensed milk was purchased for. A sample was subsequently sent to Dr. Angell, the public analyst, who certified that it was skimmed milk, all the cream having been taken off before the condensation had taken place. For the defence Mr. Beard contended that no case had been proved, seeing that a label on the tin stated that it was skimmed milk. The Bench dismissed the case, and allowed the defendant £2 2s. costs.

### MEAT INSPECTION IN SCOTLAND: AN IMPORTANT JUDGMENT.

BAILLIE MURRAY, on June 30, in Aberdeen Police-court, gave judgment in the case of James Rennie, butcher, Longacre, charged with a contravention of the Police bye-laws by having killed a calf in the New Market Buildings, said place not being registered as a slaughter-house. The evidence was to the effect that the calf was dead when it reached the Market Buildings, but that Rennie afterwards cut its throat, skinned, and dressed it. Mr. Aitken, solicitor, who appeared for Rennie, contended that the cutting of a dead calf's throat and the dressing of it did not constitute a breach of the bye-law. Baillie Murray adjourned the case until to-day in order that he might consult the assessor. Baillie Murray gave the following judgment:—After considering this case, I have arrived at the conclusion that an offence has been committed within the meaning of the statutory provision founded upon in the complaint. According to the statute, every person who uses as a slaughter-house any place not licensed as such is guilty of an offence rendering him liable to a penalty not exceeding £5. I had at first a little doubt as to the meaning to be attached to the words "used as a slaughter-house," but my attention has been directed to cases where it has been decided that the slaughtering of cattle on private premises, for sale as human food, is using the premises as a slaughter-house. Now, it has been clearly proved to my mind that the accused in this case did, on his own premises, treat the carcase of a calf for the purpose of selling it as human food. It may not have been very clearly proved that the calf was alive when it reached his premises. It was alive when delivered by the seller to the accused's messenger, and I rather think it was alive after it was in accused's premises. But that is not essential to there being an offence. When the calf came into his hands, whether it was dead or alive, the



accused proceeded to prepare it for sale as human food, and by so doing he was evading the inspection that the statute intended should take place in the slaughter-houses under the supervision of the officers of public health. There has been already a conviction for offering the meat for sale though unfit for human food, but the offence now under decision is quite separate and distinct, and falls to be dealt with under the provision in the complaint. I am therefore of opinion that the accused is guilty of the offence libelled. The magistrate then imposed a fine of £2, with £1 6s. 6d. expenses.

#### THE FIRM OF MR. HUDSON E. KEARLEY, M.P., PRESENTED AT COURT.

THE many admirers of Mr. Hudson E. Kearley, M.P., etc., etc., and the rest, will read with mingled indignation and grief that a company of which he is or was the head and front has been vending chicory at coffee price. Mr. Kearley, M.P., etc., etc., and the rest, of course, knew nothing of it; but, like the petticoat in *Our Mutual Friend*, it was there all the same. The case was against the International Tea Company, Ltd., and it came on for hearing at Sandwich, on June 29. Dr. M. A. Adams, the Kent county analyst, had certified that the sample submitted to him contained 9 per cent. of chicory, and the case was adjourned on the application of the defendants for an independent analysis from Somerset House. This had been done, and the certificate of Mr. R. Bannister was read that the coffee was adulterated with 5 per cent. of chicory. Mr. F. W. Beck, who appeared for the defendants, addressing the bench, said his clients carried on an extensive business, having over 200 branches in various towns. It would be fatal to their reputation if they became suspected of selling adulterated articles, and they took the greatest care that the goods they sold should be above suspicion. The Bench said they had given the case careful consideration, and considered it proved. Defendants would be fined 10s. and costs. It is the more lamentable as Mr. Kearley, M.P., has just been made an honorary member, or vice-president, or something, of the Society of Public Analysts.

#### CAMBERWELL VESTRY AND THE SANITARY CONGRESS.

THE committee reported that they had appointed their chairman (Mr. Perry) and the vice-chairman as delegates to attend the annual Congress and exhibition of the Sanitary Institute, to be held at Newcastle-on-Tyne in September, the delegates to pay their own expenses.

Mr. Harbord asked the chairman of the committee if he was prepared to withdraw this.

Mr. Perry: No. I move that the report be adopted.

Mr. Harbord, continuing, said this Sanitary Congress was simply a big advertising machine for certain patent rights, and he appealed to the Vestry to stand up for purity in its administration, and have nothing to do with the Congress. He moved, as an amendment: "That this Vestry refuses to authorise any delegate to represent it at the annual Congress and exhibition of the Sanitary Institute."

Mr. George seconded the amendment, and after some discussion the amendment was carried.

#### A POISON EATER.

THE following invitation was distributed to the physicians of Chicago recently:—

"Dear Sir:—You are cordially invited to witness an exhibition which will be given by Captain Vetrico, a

native of Chicago, but for many years a resident of Europe. He eats and digests poisons of various kinds in quantities large enough to kill an indefinite number of ordinary men.

"At this special and extended test Captain Vetrico will eat in poisonous doses rough on rats, pure stick phosphorus, permanganate of potash, blue vitriol and other drugs, at the discretion of the expert audience. Between poisons Captain Vetrico will crush with his teeth and swallow pieces of granite, paving stone, lumps of coal, bits of heavy porcelain plate and glass, a performance which will prove of special interest to dentists. At the conclusion of the exhibition Captain Vetrico will permit the most effective test that could be made.

"A leading professor of one of the great medical colleges of this city will draw with a pump the contents of the performer's stomach and submit them for thorough test and examination by a committee from the audience.

"For the privilege of a similar private exhibition and examination the late Dr. Pasteur, of Paris, paid five thousand francs. The proposed exhibition is intended as a deliberate and direct challenge to scientists, and the closest scrutiny and investigation is courted. A dozen or more poisons will be consumed, and of pure stick phosphorus alone Captain Vetrico stands ready to eat from five to ten grains."

#### PAISLEY MILK.

AT Paisley, on June 30, Sheriff Cowan presiding, Marion Ronald, dairy keeper, Springbank-road, pleaded not guilty to a charge of selling, on June 5, a quantity of sweet milk, which, on analysis, was found to contain 10 per cent. of added water. From the evidence it appeared that a boy who is engaged as a clerk in the office of the sanitary inspector had purchased the milk. The assistant then went into the shop and stated that the milk had been bought for public analysis. Mr. Dugald D. Dickie, writer, appeared for the defender, and contended that, according to the 13th section of the Food and Drugs Act, an assistant inspector was not entitled to appoint a deputy to make the purchase. He also argued that according to section 14, the person who makes the purchase is required to intimate that it is for analysis, and further, that in the complaint it was stated that the purchase was made by the assistant. His lordship held that it was the duty of the inspector to procure samples. There was nothing in the Act, so far as he saw, which necessitated the procuring of them personally. What he did was to send in the clerk, and having obtained the article he did his duty according to the 14th section by intimating that the milk was for analysis. He repelled the objections, finding the charge proven, and imposed a penalty of £2, with the option of 10 days' imprisonment.—James Tyre, dairyman, 39, George-street, pleaded not guilty to a charge of having sold a quantity of sweet milk which was found to be deficient in natural fat to the extent of 20 per cent. Mr. Benjamin Lang, writer, appeared for the defender. He raised several objections as to relevancy, and contended that, as the vessel of milk from which the lot in question was sold consisted of one cow's milk, his client was entitled to absolver. Sheriff Cowan found that the latter point had not been proved to his satisfaction, and, repelling the objections, imposed a fine of £2, with the alternative of 10 days' imprisonment.

#### A MILK CASE AT EPSOM.

MR. T. W. WEEDING, deputy clerk to the Surrey County Council, appeared in support of the summons against James Alder, and said the information against the defendant was laid by Mr. C. J. Martin, the duly-appointed inspector, and the case came before the bench in the month of January last. At the conclusion of the case for the complainant the solicitor, who then defended Mr. Alder, produced a copy of the *Times* from which he read a report, and the bench on the facts stated in the report—a summons heard at the North London Police-court—dismissed the summons, which was for an offence against the ninth section of the Food and Drugs Act, 1875, for selling as "new milk," milk from which the cream had been extracted. The bench held that it was



necessary to aver on the information that such sale was "to the prejudice of the complainant." Where milk was adulterated by the addition of water it was necessary that the information should state that it was sold "to the prejudice of the purchaser," but where the article sold was deficient through the abstraction of some important ingredient the Legislature did not require that the words "to the prejudice of the purchaser" should be given. However, the bench followed the case produced by the solicitor for the defendant—although that case was for adulterating milk by the addition of water—and dismissed the summons because the words "to the prejudice of the purchaser" were not contained in it. The County Council desiring to have the matter set right, appealed to the Queen's Bench, and a divisional court had, at the beginning of this month, held that the magistrates were wrong. The order drawn up was, "We find that the matter should be remitted to the said justices with the opinion of the court thereon that such information is good." That being the case it was usual to take up the summons where it was left, but at the hearing the defendant's solicitor did not cross-examine, and he believed the defence agreed upon the facts. He now asked for judgment with costs.—In the course of a short discussion Mr. Robson said the bench had been misled in the matter. The *Times* report was read but not handed to them.—While this discussion was going on the defendant walked into court. He protested against the validity of the proceeding, but the Chairman said the bench must convict as the Queen's Bench had decided against him on the point of law, and he understood that the facts were admitted. (Defendant: No; the case was not gone into.) Well, defendant's counsel did not cross-examine, which was practically the same thing. They fined the defendant 40s. with 12s. 6d. court costs and £3 2s. costs of the witnesses.—In answer to defendant the bench informed him that he might appeal after he had paid the money.—Defendant: And what is the alternative?—The Chairman: Twenty-one days.—Defendant: With hard labour?—The Chairman: Yes.—Defendant: That's very unjust.

#### DUBLIN MILK.

SEVERAL contractors for the supply of milk to the South Dublin Union attended on July 3 at the Police-court, at the instance of Mr. Alexander Fraser, Master of the South Dublin Union and Inspector of Nuisances, who complained that on the 10th June last they supplied milk to the workhouse adulterated with water.—John Kinsella, of 70, Pill-lane, was summoned for supplying milk containing, as alleged, 16 per cent. of added water and two per cent. of starchy matter. Mr. Rice appeared for the Corporation, and Mr. Gerald Byrne for the defence. Mr. Fraser deposed that he took a sample of the milk and sent it to Sir Charles Cameron, whose certificate he produced. Mr. Byrne, on behalf of his client, asked that the sample of the milk supplied by his client on the day in question might be sent for analysis to Somerset House. Mr. Swift said that unless a *prima facie* case was made showing that there was something wrong in the analysis made by Sir C. Cameron it would not be in accordance with practice to refer the cases to Somerset House. Mr. Byrne had a right to ask for the attendance of Sir Charles Cameron, and as the certificate in some of those cases disclosed a kind of adulteration not ordinarily used, he thought it better that Sir Charles Cameron should attend and give evidence in reference to the analysis. His worship then directed that this and the several other cases should stand over for a week for the attendance of Sir Charles Cameron.

#### IRISH WORKHOUSE MILK.

At the Castlereagh Petty-sessions on July 4, Edward Melia, Roscommon, milk contractor to the Castlereagh Workhouse, was charged by Sergeant Fogarty with having supplied adulterated milk to the Workhouse on May 7 last. The evidence for the prosecution went to show that on the date in question the prosecutor took a sample of defendant's milk, which was forwarded to Sir Charles Cameron for analysis, when it was found to contain 39 per cent. of water. The Chairman (Captain M'Terran, R.M.) in fining the defendant £5 and costs, dwelt on the injustice of supplying such milk to the poor, aged, and sick people of the Workhouse.

#### MILK AND THE FORM OF CERTIFICATE.

At Bootle, on July 3, Agnes Holmes, Cyprus-road, Bootle, was summoned for selling adulterated milk on June 10. The certificate of Dr. Campbell Brown showed that upwards of 7 parts of water had been added to every 100 parts of the poorest milk, which was deficient in cream to the extent of one-fourth or more. Mr. Rudd defended, and contended that the case ought to be dismissed, as the certificate was not in proper form; it ought to state the percentage of water found in the sample. On this ground the case was dismissed.

#### SPIRITS.

##### THE LABELLING QUESTION.

At Brentford, on Saturday, before Mr. G. G. Mackintosh (in the chair) and other magistrates, Alfred John Smith, of the firm of Messrs. Smith and Son, wine merchants, was summoned under the Act of 1875 for having sold gin which was forty degrees under proof.—Mr. J. S. Phillips defended.—Mr. John Churchman, an assistant to Inspector Tyler, said on June 10 he went into the defendant's shop at 29, The Broadway, Ealing, and there saw the manager, Mr. Howard, behind the counter. Witness asked to be served with a bottle of gin, and Mr. Howard said, "What price?" and quoted several prices. Witness said he would have that at 1s. 8d. per bottle, which was the lowest price. Mr. Howard then asked him whether he would put the bottle in his bag or have it wrapped up in paper. Witness had it tied up.—In reply to Mr. Phillips witness said Mr. Tyler did not instruct him what price gin to buy; the only reason why he bought that at 1s. 8d. was that it was the cheapest. Had he seen a notice in the shop to the effect that the spirits sold were diluted, he should not have purchased the gin.—Inspector Tyler said he received a bottle of gin from the last witness. On entering Mr. Smith's shop he looked for such a notice as had been referred to.—Finding none, he drew Mr. Howard's attention to the fact, and Mr. Howard immediately said, "Yes, there is; it's on the bottle." The public analyst certified the gin to contain 60 per cent. of proof spirit, and 40 of added water. That was the equivalent to 40 degrees under proof, and the Act only allowed 35 degrees. About four years ago he summoned Mr. Smith, at Harlesden, but the case was dismissed because the magistrates held that the label on the bottle complied with the Act. He submitted that the label on the bottle was no protection.—Mr. Phillips said that the gist of the action was whether or no the sale was to the prejudice of the purchaser. He could not see how the purchase of the gin could have been prejudicial to Mr. Tyler, seeing that in consequence of a previous action he knew perfectly well that 1s. 8d. gin was 40 degrees under proof. He contended that the label on the bottle complied with the Act.—The Clerk pointed out that it had been decided that if there was not a notice with regard to the dilution of spirits in the shop it was in consequence not only necessary to have the bottle labelled, but to draw the attention of the purchaser to the label.—Albert Howard said Mr. Tyler's assistant had every opportunity of seeing the label on the bottle before it was wrapped up. It was placed on the counter immediately in front of him, and stood there several minutes. In reply to the Chairman the witness said he did not draw Churchman's attention to the label.—The Chairman said that there must be a conviction; the fine would be £5 and costs.—Mr. Phillips announced his intention to appeal against the decision.

At Mansfield Petty Sessions, John Wright, tenant of the Hope and Anchor Inn, Union-street, was summoned by Colonel Storey for selling adulterated whisky. Colonel Storey deposed to visiting the house and purchasing a quart of whisky, a third of which was analysed by the County Analyst, and found to contain 47 added water more than the quantity allowed. Mr. J. T. Fidler appeared for the defendant, who was fined 21s., including costs.

At Farnham, on July 2, Frank Stone, landlord of the Queen Inn, Upper Hale, was summoned for selling adulterated rum.—Mr. E. Jackson defended.—Mr. E. Cliffe, inspector to the Surrey County Council, submitted evidence as to the purchase of the rum. He put in a certificate showing the rum to be 41 per cent. under proof.—Mr. Jackson, on behalf of his client, pleaded guilty, and said he would show that in this case a pure accident had occurred, and no gross fraud was committed. The defendant took the house from a Mrs. Kenton, and the latter told him that all the spirits were as received from the brewers. Acting on what Mrs. Kenton had told him, the defendant "broke" the rum down, after it had already been "broken" down.—The



defendant gave evidence in support of this statement.—Mr. Goodall (Farnborough), representing Messrs. Simonds, brewers, deposed as to the strength of the rum sent out.—The Chairman said the Bench did not wish to discredit the defence, but the defendant ought to have taken the precaution and trouble to see that the spirits were as represented by the outgoing tenant. Defendant was fined 40s. and costs.

### MEAT.

At Derby, on July 6, Edwin Brown, of Mackworth, was summoned for sending to Derby Market, on the 29th ult., a diseased cow and stirk. Inspector Wilkinson said the cow was suffering from tuberculosis, and the stirk from a diseased liver. A fine of 20s. and costs was imposed.

At Clerkenwell, on July 3, Seth Bull, of Northland, Little Ilford, Essex, was summoned before Mr. Horace Smith, by Sanitary Inspector Billing, of the Holborn Board of Works, for depositing at the premises of a meat salesman, on May 17, six carcasses of pork and eleven plucks, which were diseased and unfit for human consumption.—The defendant said his wife had sent the meat up, and the magistrate said this amounted to a plea of guilty, the defendant being responsible for the act of his wife.—It was stated that the animals had suffered from swine fever.—Mr. Horace Smith imposed a fine of £20.

### ANOTHER COPPERED PEAS CASE.

HAVING succeeded in the recent appeal case at the Newington Sessions, the St. Saviour's District Board instituted proceedings against another vendor of preserved green peas containing sulphate of copper.—John Parker, of 71, Blackfriars-road, was summoned at Southwark on July 3, for unlawfully selling, to the prejudice of the purchaser, peas containing, according to the public analyst's certificate, 3.11 grains of sulphate of copper per pound of peas.—The hearing was adjourned for an analysis at Somerset House.

### ABORTIVE MUSTARD PROSECUTIONS.

At the Loughborough Petty Sessions, on July 1, John Ratcliffe, grocer, of Church-gate, was charged with selling adulterated mustard at Loughborough on May 28.—The Deputy Chief Constable prosecuted, and Mr. Louis Tillet, of Norwich, defended.—The prosecutor said that on the day in question he went into the defendant's shop and asked him for some mustard. He said that he had not any loose mustard, and got him a tin which he emptied out on to the counter. Witness told the defendant that he wanted it for analysis, and divided it into three parts. One he gave to the defendant; another he kept himself, and the other he sent to an analyst. The defendant placed his portion in a drawer. Witness in due time received a report from the analyst, Mr. Dyer.—Mr. Tillet objected to the report being put in as evidence, on the ground that the certificate was not in compliance with the schedule given in Section 18 of the Food and Drugs Act, and also because the analyst had not set out the constituent parts of the sample analysed. He quoted a number of cases in support of his objection, and concluded with the remark that the certificate was informal and not evidence according to the Act, and therefore he thought that the case should be dismissed.—The magistrate, after a short retirement, decided to dismiss the case on the ground that the analyst had not set out the constituent parts of the sample analysed.—Richard W. Stevens, grocer, of Loughborough, was charged with a similar offence, but as the circumstances were similar the case was not proceeded with.

### OLIVE OIL.

At Kingsclere Petty Sessions, on June 26, Frederick Twitchen, of the Market-place, Kingsclere, was charged with having sold a flask of oil which was not of the standard quality, on May 28. Sergeant Frank Squibb stated on the 28th May he visited defendant's shop and asked for a flask of olive oil, for which he paid 8d. Witness then informed defendant for what purpose he had purchased it. The certificate of the analyst showed that there was none of the genuine article in the flask, but it was composed of cotton

oil. Defendant stated that he did not sell it as olive oil nor did he hear the prosecutor ask for olive oil, but simply a flask of oil, which he was generally asked for. Defendant was ordered to pay the costs, including analyst's fee, £1 4s. 11d.

### NOTTS TOWN COUNCIL AND DRUG ADULTERATION.

THE quarterly report of the Borough Analyst showed that he had analysed 10 samples of laudanum and 10 samples of sweet nitre. All the samples of laudanum were pure, and eight of the samples of sweet nitre were adulterated.

The Town Clerk remarked that he thought there ought to be some qualification with regard to the sweet nitre samples. It seemed very difficult to keep sweet spirits of nitre for any length of time without the evaporation of some of the component parts, and the Corporation only proceeded in two of these cases. The word "adulteration" was not quite right; the sweet nitre lost its quality through being kept so long.

### COCOA BUTTER.

THE House of Commons went into Committee of Ways and Means on July 2. Mr. J. W. Lowther in the chair.

The Chancellor of the Exchequer moved: "That the duty of Customs now payable on cocoa or chocolate, ground, prepared, or in any way manufactured, under the provisions of the Act 42 and 43 Vic., c. 21, S. 3, shall be payable on the product of the cocoa bean, which is generally known as cocoa butter." He said that the matter was a very small one, and could be easily explained. At the present moment cocoa, raw or manufactured, was liable to duty; and it had been discovered that cocoa butter, though manufactured from cocoa, could not properly be included as a manufactured article, because the process of its manufacture did not come within the scope of existing provisions. This article was largely used in the manufacture of chocolate, and out of every hundredweight of raw cocoa about 86lb. of cocoa butter was manufactured. As the law stood, the manufacturer of cocoa butter in this country was liable to a duty of 1½d. on every pound; whereas the manufacturer abroad was able to send it here without paying any duty. This was protection for the foreigner against the Englishman (hear, hear), and for that reason he asked the Committee to adopt the resolution.

Mr. Kearley objected that no notice of this motion had been sent to the great manufacturing firms of the country.

The Chancellor of the Exchequer said that he had received communications from Messrs. Cadbury, Taylor, Epps, Lupton, and Thorn, all of whom desired this alteration in the law. (Cheers.)

Mr. Kearley noticed one serious omission from among those firms, and that was a firm that flourished in the district that the right hon. gentleman represented—Messrs. Fry, of Bristol. He understood that they strongly objected to this, and appeared to have been quite in ignorance of it.

The Chancellor of the Exchequer said that he had received a communication from Messrs. Fry, who, he thought, had not understood the purport of the resolution.

Mr. Kearley asked that the resolution might be postponed for at least a week in order that Messrs. Fry and other firms might be given a hearing. If they imposed a duty on cocoa butter, the foreign trade of certain firms in this country would pass away.

The Chancellor of the Exchequer said if the resolution was passed that day the only effect would be that it would enable him to put a clause on the paper with a view to its being inserted in the Finance Bill. That clause could not be considered at least for a week, and that would give time for its consideration by those interested in it.

Sir W. Harcourt hoped his hon. friend would be satisfied with this assurance.

The resolution was then agreed to, and the House resumed.

### LONGFORD ANALYST'S REPORT.

THE County Analyst, Professor R. T. Tichborne, reported as follows:—I have to report that during the quarter 46 samples were forwarded to me for examination; 2 water, 2 whisky, 1 brandy, 1 rum, 3 milk, 2 buttermilk, 2 pepper, 3 butter, 4 tea, 5 various drugs. The water specimens were from Ballymahon district, and both were condemned as



unfit for use, being polluted. The various other samples were from Longford, Ballymahon, and Ballinalee, whilst the drugs were sent by the Longford Board of Guardians, one of which was certified against as not being of the necessary quality of the British Pharmacopœia. The other samples were passed. The brandy examined contained an excessive amount of solid matter, but no prosecution was instituted on this ground, the strength of the spirits being maintained. The vendors were cautioned. A vendor named Bridget Egan, Ballymahon, was cautioned for selling spirits slightly below the standard. All other samples of spirits were pure and unadulterated. Certificates were granted in four cases against vendors of new milk and buttermilk, and another was directed to be cautioned. Anne Keenan, of Leitrim, was fined 10s. for selling buttermilk containing 23 per cent. of water in excess of the 25 per cent. allowed for churning. John Carolan, of Boher, was fined 5s. and costs for selling buttermilk adulterated with 43 per cent. of added water.—John White, Longford, was fined 10s. and costs for selling new milk adulterated with 20 per cent. of water. The case against J. Larkin, Longford, for selling new milk adulterated with seven per cent. of added water was dismissed without prejudice at the Longford Petty Sessions on the 30th February, the defendant and his servant deposing that no water had been added to the milk.

### ANALYSIS OF FOOD IN LEEDS.

THE report on analyses made for the city of Leeds during the quarter ending June 30, by Mr. T. Fairley, City and County Analyst, show that the samples were:—Milk, 33; skim milk, 2; butter, 5; cheese, 1; bread, 3; biscuits, 3; tea, 1; tinned peas, 2; total, 50. Four of the samples of milk were adulterated with 16, 11, 11, and 9 per cent. of water respectively, as compared with the lowest quality of natural milk, and six were reported as of low quality. Both the samples of tinned peas were adulterated with copper, corresponding to  $2\frac{1}{2}$  and 2 grains of copper sulphate per pound respectively. The other samples were genuine.

### SHAM PLOVERS' EGGS.

CHEMICAL science, which already has much to answer for in the matter of food adulteration, is now said to be responsible for the production of sham plovers' eggs, so closely resembling the genuine thing in appearance and flavour as to deceive even the gastronomically elect. The fraud is understood to be affected by the application of dyes and flavouring-matter to eggs of other and commoner species which resemble those of the plover in shape and size. In future, therefore, one may have the pleasure of paying for these dyed and doctored impostures the price of genuine plovers' eggs, since there will apparently be no means of compelling the enterprising tradesman to distinguish between the false and the true. It becomes a question whether this kind of scientific ingenuity, which supplies a direct encouragement to dishonesty, should not be subjected to severe legal restrictions. Logically, there is no more reason why anyone should be allowed to issue a spurious plovers' egg than spurious coin to the value of the sum which the genuine article commands.—*The World*.

### EXETER CITY COUNCIL AND THEIR SANITARY INSPECTORS.

MR. E. W. WALLIS, secretary of the Sanitary Institute, wrote inviting delegates to be present at the Autumn Congress and Exhibition of the Institute, to be held at Newcastle-on-Tyne from September 2nd to 9th, 1896. The Town Clerk remarked that before the Council considered this communication it would be advisable for him to read a letter he had received from Mr. W. J. Wreford, the sanitary inspector for the city. Mr. Wreford asked the Council to extend his holiday from a fortnight to a month. For the past two years he had not taken the holiday allowed him by the Council. Mr. Alderman Domville suggested that the application of Mr. Wreford be granted, and that he be awarded the sum of 20 guineas to cover the expenses of his holiday. The Sanitary Committee had been considering what pecuniary award they should vote to Mr. Wreford for the excellent services he rendered to the city during the recent smallpox epidemic. The difficult work which Mr. Wreford then carried out was characteristic of his zeal and

ability. It saved the city from a great catastrophe. The risks which Mr. Wreford ran as regards his health entitled him to generous treatment at the hands of the Council. The Committee also felt that the medical officers did all that was required of them during a very trying time, but there was no doubt that the brunt of the work fell upon the sanitary inspector. He moved that Mr. Wreford be appointed the delegate to attend the Congress of the Sanitary Institute, that he have a month's holiday instead of a fortnight, and that 20 guineas be voted him to cover his expenses. Mr. Alderman Perkins had much pleasure in seconding, remarking that Mr. Wreford had discharged very onerous duties in an extremely able and courteous manner.—Mr. Cole and Mr. Peters supported, both testifying to the abilities of the sanitary inspector, and pointing out that by his energy and skill he had saved the city from great expense during the recent small-pox epidemic.—Mr. Williams thought that Mr. Wreford's assistants deserved some kind of recognition. If the Council rewarded the services of one officer they ought not to forget the others.—The resolution was carried unanimously.

## CORRESPONDENCE.

*To the Editor of FOOD AND SANITATION.*

### THE LATE BEEF STEARINE IN LARD CASE.

SIR,—Attention has been directed to the statement reported to have been made by Mr. Sankey, of Cardiff, who supplied the lard which was the subject of the prosecution, viz., that "there was no such thing as pure lard known during the hot summer weather; that what was recognised as pure lard throughout the trade generally contained about 16 per cent. of beef stearine; that the only time that pure lard was actually sold was at Christmas, and that beef stearine was of the same value as pure lard."

In the face of such an erroneous statement on the part of one who, being in the trade, might be considered more or less as an expert, we think it only fair to ourselves to ask you to give publicity to the following:—

(1) That we, the undermentioned firms of English and Irish bacon-curers, declare emphatically that we have never put beef stearine or other foreign substances into lard, and that we have never sold any lard that has not been absolutely pure hog product.

(2) That good hogs' lard, even in the hottest weather, does not require stiffening of any sort.

(3) That pure lard, as recognised by the trade, is exactly what it professes to be. We are, &c., (Signed)

ADYE & HINWOOD, Malmesbury.

W. F. BIGGER, Londonderry.

BOWYER, PHILPOT & Co., Trowbridge.

BUTTLE BROTHERS, Enniscorthy.

G. R. & B. CALCOTT, Bristol.

COEY & Co. (Limited), Belfast.

HENRY DENNY & SONS (Limited), Waterford, Limerick, and Cork.]

JAMES DOLE & Co, Bristol.

C. & T. HARRIS & Co. (Limited), Calne.

HIGHBRIDGE BACON FACTORY (Limited).

KEHOE, DONNELLY, & PAKENHAM (Limited), Dublin.

LUNHAM BROTHERS, Cork.

D. MCCARTNEY & SON, Ballymena.

J. MATTERTON & SONS, Limerick.

MORTON & SIMPSON, Ballymena.

H. NAISH & Son, Bristol.

OAKE, WOODS & Co. (Limited), Gillingham.

Executors of J. J. RICHARDSON, Waterford.

W. J. SHAW & SONS, Limerick.

SPEAR BROTHERS & CLARK, Bristol.

WILTSHIRE BACON CURING COMPANY, Chippenham.

### LONDON'S FISH RING.

No class of tradesmen are more hopelessly at the mercy of the wholesale dealers than the retail fishmongers of London, says the *Manchester Courier's* correspondent. The absolute control that the Billingsgate "ring" wields over the fish supply of the metropolis, to the detriment of retailers, consumers, and fishermen alike, is almost without parallel in any other industry in the civilised world. So supreme is the authority of this autocratic "corner" that it



not only regulates prices as it pleases, but practically exercises the right also of limiting the quantity of fish brought into the market for sale. In view of this long-standing abuse, and the difficulty of combating it, it may be interesting to learn that two or three metropolitan members of Parliament have undertaken to bring the matter under the notice of the Government with a view to legislation thereon. All attempts upon the power of this Billingsgate iniquity have hitherto been abortive, but until its strength has been broken the appalling waste of unsold fish in London will continue. The statistics of the last "spratting season" supply the latest illustration of the magnitude of this scandal. From these it appears that over 2,000 tons of these fish, originally destined for the London market, where the ring maintain their price at 6s. per cwt., were ultimately disposed of as manure at 1s. per cwt. This is about the sum one will pay for a dozen or so of them in a West End restaurant, where they are served up as "whitebait."

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

*(Continued from page 323.)*

Another remark may be added here. A lamp law requires all at once a great outlay in new cooking apparatus or their alteration; the amount cannot be estimated, but will be very great on the whole. The application of the law will require great yearly outlays, so that it should be applied strictly. The oil remains then as it was, and the Standard Oil Company gets every year for its 6 to 8 per cent. of naphtha—which it sells as burning oil—the coveted millions. A decrease of the number of accidents may be expected; but if one considers that such, according to the publications of the Metropolitan Board and the London County Council, cannot be noticed during the last ten years, rather the number has increased, one has the right—not like Majendie, Abel, and Redwood—to assert that this decrease will not be very considerable, and that a lamp law will not be sufficient. It is only a question of conjecture; will it be 20 per cent. or 50 per cent., perhaps more, perhaps less? One should also consider that a passionate champion of a lamp law like A. Spencer (see "Report on Petroleum") does not know how to take measures against existing lamps, which certainly should be the case.

But now, if the test of the oil is increased to 104° F. or 113° F. its present price may rise a little, which, however, is not quite certain; at the most from one to two pfennig per 1 litre. The increase in price is certainly much less considerable than those fluctuations to which petroleum every now and then is subjected arbitrarily. Perhaps the Standard Oil Trust raises the price at any rate—be it as a reprisal measure; be it because it wants to realise its immense gain. But it may be expected that Baku will help, as long as the world monopoly by Pennsylvania-Baku does not exist, and Europe is not handed over to it with tied hands. Already now great quantities of crude petroleum which still contains burning oil are used as fuel on steamers, railways, and so on.

An increase of two pfennig per 1 litre requires from a working family who use 1 litre daily (as often is the case in Amsterdam), a yearly increased outlay of about eight marks. But I repeat, an increase of price is unnecessary if the great petroleum companies are pleased with a smaller gain; also in that case the business remains really very remunerative (see later on).

It may be asked, what purpose does all these "very considerable difficulties," of which Majendie himself speaks, serve; these measures, this control service with inspectors, fines; these considerable outlays? Solely this purpose: that the powerful American Company can continue to leave in the petroleum, and to send to Europe the 6 to 8 per cent. volatile parts which are

prohibited in many States of America, in Canada, and in the English War Department. It is clear that the Standard Oil Trust will gladly take some trouble about this. In the year 1893, for instance, petroleum has been introduced from America into Europe to the amount of about 220 million marks. The value of the naphtha present in the petroleum when it is sold as petroleum can be estimated very low at 10 million marks; in fact at 7 per cent. = 15 millions. Here at least one quarter is pure gain, since naphtha itself will become much cheaper when it cannot be added any longer to petroleum. It will also then be more difficult to sell, and will partly have to be stored; it does not matter about 1 million more or less. One can, as I have remarked, estimate without exaggeration the damage by petroleum, caused by a too low flashing point, yearly in Europe at many millions. The human lives, which possess no "mercantile value" and cannot be transferred into American dollars, are left out of the calculation altogether.

As already marked, the preventative measures which busy themselves only with the construction of lamps, however useful they may be, can never be so decisive as a general increase of the flash point. Such has already been emphasised by experts and chemists, who turned energetically against the contents of the report and have questioned a possible "lamp law" as the only measure. The opposition in the newspapers and some Chambers of Commerce against the present low flash point, and in some sections of the Society of Chemical Industry against Abel and Redwood's report, has happily been a very strong one. In speaking about this report I have touched on already different things about the discussions of the Scottish and Manchester sections, and have transferred it from what was spoken there. It is worth the trouble to read these discussions, in spite of many repetitions. The result of the published opposition is certainly satisfactory; it has led to the appointment of a Parliamentary "Inquiry Committee," the report of which we will now consider a little more closely.

(2.) REPORT ON PETROLEUM.—This Commission has 13 members, among them, as a chemist, H. Roscoe. A shorthand report of their deliberations has appeared in July, 1894. It contains the opinion of three persons—Majendie, Alfred Spencer, chief officer of the Public Control Department of the London County Council, and John Young. The Commission was not able to finish its work before the end of the meeting. Unfortunately, it did not meet last year, and at the meeting of Parliament, which begun not long ago, voices had been heard requesting its re-appointment. Unfortunately, H. Roscoe, as, I think, the only chemist in the English Parliament, has not been re-elected.

This report must now be considered critically. But, first of all, we must take notice of a remark by Mr. Spencer which he makes in an official report to the London County Council, although I have touched on it already, which we also find in the "Report." In the report of Abel and Redwood an endeavour appears to be made to give the impression that oil with a lower test is less or just as dangerous as oil with a higher test. Spencer likewise, a champion of safety lamps as the only measure, well known by his researches and essays about the construction of lamps, asserts that oil of 73° F. (Abel test) gives no inflammable vapours under 100° F. Everyone can draw the conclusion from this, as Spencer himself does, that oil of 73° F. (Abel) is not dangerous, properly speaking. One is inclined to ask, if this is true, how is it possible that such an immense number of accidents happen? For even with bad lamps an oil would not be dangerous which emits inflammable vapours only at 100°. So we read in the "Report made to the Fire Brigade Committee," London County Council, by the chief officer (Alfred Spencer), in 1893, page 12—"Ordinary petroleum does not give off inflammable vapour except when heated to



a temperature of 100° F., which is equivalent to 73° F. when tested in the closed testing apparatus prescribed by the Act." And further, when he speaks on page 12 or 13 about examinations of oils at accidents—"In 13 samples of oil obtained the average flash point was 82°, the highest flash point being 97°, and the lowest 73° in the closed test apparatus, which is equivalent to about 125° F. and 100° F. respectively in the open air."

The origin of this perfectly false way of representation lies in the conclusion drawn from the asserted equivalence of the old English open flash point of 100° F. with the later given (Abel) test of 73°. Even if this equivalence, as fixed by Redwood in consequence of a great number of experiments, is correct, and I am not denying it at all, it does not follow by any means that for this reason oil of 73° (Abel) does not give inflammable vapours below 100°. In order to see this, the following considerations about the connection between the open and the close test, and some simple experiments, are sufficient:—In determining the open flash point, the result depends much more, than in the case of the close one, on the manner of procedure and the apparatus. Thus one can certainly, with an oil of 73° F. (Abel) reach an open flash point of 100° F., perhaps even higher. Everything depends on the quickness of heating and the form of the container. If one heats slowly, and the container is flat and not deeply filled, then during heating a considerable part of the most volatile portion evaporates; the rarefaction of these vapours is too great to be inflammable. Now, if after a certain time the oil ignites, then this flash point does not any longer refer to the original oil but to that oil which has been robbed of a part of its naphtha. Thus the Americans go still further and accept the open burning point (fire test). Oil of 73° F. (Abel) then coincides with 120° F., fire test; that means in the American language that oil of 73° F. (Abel) begins to burn, and continues to burn, only at 120° F. How completely incorrect an idea one can form thus about the danger of a paraffin oil follows from some simple experiments:—A small tumbler of 100 ccm. filled two-thirds with oil of 72° F. (Abel), was heated very slowly; the open flash point was found at 73·4° F., and the burning point at 78·8° F. What remains now of Spencer's assertion that oil of 73° F. (Abel) does not develop inflammable vapours under 100° F.? Further, take the following experiment:—Two quite equal small flat porcelain saucers were filled each with 30 ccm. of the same oil; the one was weighed, and served as a control. I allowed them to swim on slowly heated water which contained a thermometer. The open flash point lay now at 86·0° F., and the burning point at 100° F., but the control saucer had decreased at the first temperature 2·5 per cent., and the latter about 5 per cent. of its weight; the temperatures found refer thus to oil which had lost 2·5 and 5 per cent. respectively of its naphtha. An experiment by Steuart is also very instructive; he took a greater quantity of an oil of 73° F., and found that the open flash point and the burning point coincide at 76° F. I have found the following:—One-half litre petroleum of 73·4° F. was heated in a closed metal vessel of 1 litre. At 73·4° F. the vapours and the oil inflamed themselves, and the latter remained burning. With an oil which contains 5 per cent. of 131·0° F. to 212·0° F. boiling naphtha, this result will cause no astonishment. Under perfectly similar circumstances the oil of 118·4° F. test could be ignited only at 122·0° F. These experiments explain the great danger of petroleum: the so-called flash point of 100° F. or the fire test of 120° must not at all be transferred to the oil of 73° F. (Abel).

Thus one must protest energetically against Spencer's way of representation, all the more since he repeats it before the "Select Committee." On the question of the President, Mr. Mundella, page 31, No. 380, "Have

you formed any opinion as to the advantage of raising the flash point of petroleum oil?" Spencer answered he had the opinion that the raising of the flash point is not necessary, and continues to say—"As the temperature of the atmosphere in this country never reaches 100° F., the present flash point (which is equivalent to 100° F.), would appear to give adequate protection against the giving off of inflammable vapour under ordinary conditions of use." But he himself contradicts his opinion on page 35, No. 418, when he describes how, by the upsetting of a lamp, this evolved vapour inflamed itself "sudden and instantaneously as a gunpowder explosion." The answer to No. 498 is also very vague. Jacks asks, "Then if our atmosphere be 70° or 80°, which it often is, would you not consider 73° shaving it rather close?" and Spencer answers, "In reply, my answer would be that 73° (Abel) is equivalent, or is believed to be equivalent to 100° F. in the open test." Here, then, Mr. Spencer believes that 73° F. (Abel) is of equal value to 100° F. open test. And further (519), when Jacks says, "Would it, in your opinion, be better, assuming that it did not materially raise the price, to use oil which does not give off inflammable vapours at the ordinary temperatures of the atmospheres?" Spencer answers, "I do think so." Jacks repeats (520), "You think that it would be safer at the same price?" and Spencer replies, "Yes, but I think it would be still safer to use properly-constructed lamps." Now Spencer, if he wanted to be consequent, should have answered to the first question: at present no oil is used which gives off ignitable vapours at ordinary temperature of atmosphere. But now he has admitted that oil with a higher flash point is better than with a low one, even although he should by far prefer safety lamps. There is also a report by W. Fox, secretary of the Petroleum Association, spoken about, which he hands over to the Committee, and which is published here for the first time. The first conclusion to which Fox's experiments led him are—"High-class oils are every way safer than low-class oils, no matter what kind of lamp they are burned in." Jacks asks, in No. 554, "Do you agree with that?" Spencer answers, "I can only repeat what I have said so often before, that if used in unsafe lamps I do absolutely agree with it, but that if the lamp is perfectly safe that covers the whole field." Thus Spencer admits that in what he calls "unsafe lamps," which are almost solely sold, No. 518 (the publications of the London County Council about lamp constructions seem to have had very little influence, 405), oils with a higher test are better in every respect. But he knows likewise that the general use of "perfectly safe" lamps can only take place many years after the introduction of a "lamp law," even although it were the case that all so-called safety lamps were really safe (see below) and remain safe. This follows from Spencer's own words. He has mentioned before the Commission some main points of a future lamp law. He wants only to regulate the sale of safety lamps. Mundella asks, No. 423, "And you would prohibit, I presume, the sale or the use of a bad construction?" Spencer answers, "No, I only deal in the sale; I only propose to prohibit the sale of lamps of a dangerous type." And when the chairman, probably very much astonished, continues (424), "But, as you say, the mass of lamps in use are dangerous, would you prohibit the use of dangerous lamps?" Spencer says, "I have not ventured to go so far as that, not even to suggest that the lamps already manufactured and bought by the retailers could be condemned; I leave that for the Committee to do." But personally Spencer is certainly of the opinion that the sale of the existing unsafe lamps should be prohibited, which is quite rational.

(To be continued.)



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# Food & Sanitation

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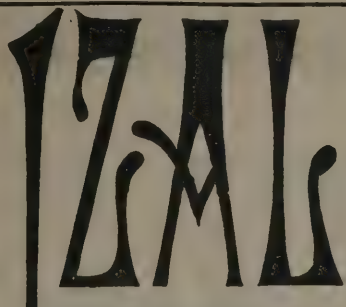
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## Food and Sanitation.

SATURDAY, JULY 18TH, 1896.

### A FRIENDLY CRITICISM OF SOMERSET HOUSE AND OTHER EXPERTS.

WHEN we made up our mind four years ago that we would hang the Somerset House scalp in our wigwam, that department was regarded as so firmly entrenched behind the Government that it was hopeless to assail it. Many cursed its mischievousness, but only two or three analysts had the courage to occasionally attack it. To the general public it was a veritable veiled prophet. And our exposures, although their justice and necessity

were fully recognised by those competent to judge, were regarded as well-meant but hopeless. Well, we have hit, and hit, and hit, and never ceased hitting until to-day. Somerset House is vanquished, its fangs are drawn, it stands a flouted, despised, and ostracised body, branded by a House of Commons Committee as unfit for functions it has for years wantonly abused. No special pleading can get over the fact that a House of Commons Committee, after hearing its defence, has deliberately returned a verdict of guilty and passed a sentence of death. The finding of the Select Committee is not yet law, but legislation must follow its report, and that legislation, in this respect at least, cannot but endorse the committee's finding. But in many respects the committee's report is weak, doubtless owing to that political hack, T. W. Russell, some of whose worst and most insidious proposals were happily scouted and squelched. The vital recommendation.

### A COMPULSORY ACT,

is not made, and unless local authorities are compelled to enforce it, the Act will always be a farce in many parts of the kingdom. Four years ago we laid down the essentials of a new Act, and wrote what caused people to question Somerset House and its methods. It is a striking illustration of the truths we then laid down that, almost coincident with the report of the Select Committee of the House of Commons, there should appear the following report by Dr. James Herron, M.O.H., St. Saviour's Board of Works, anent the coppered peas case. Dr. Herron says:—

"Mr. Richard Bannister, Deputy Principal of the Inland Revenue Branch of the Government Laboratory, was called to prove the result of his analysis, which he stated to show that only .461 of a grain of copper, or less than 2 grains of sulphate of copper, was present in the pound of peas. This came as a surprise, which was speedily moderated when his method of analysis was investigated, and it is enough to say that, as Dr. Paul, the analyst for the defence, agreed with and accepted the analysis of Mr. Bodmer, Mr. Bannister's analysis was disregarded entirely by the learned judge. At the same time, the incident is not without interest as showing how fallacious and unreliable are the analyses of Somerset House, and it may be hoped that the condemnation of their methods and the repudiation of their results may induce the authorities of the Government Laboratory to make the alterations necessary to entitle their analyses to respect or acceptance.

"Dr. Whiteside Hime testified to certain alleged experiments by himself which, he said, showed the copper was excreted very rapidly, and therefore could have no cumulative effect, and also that the bulk of the salt of copper was retained in the husk or skin of the pea. Being asked the details of his tests, he fluently enough said he treated the excreta with water and alcohol and other solvents, a method so manifestly ridiculous that, being further pressed, he absolutely declined to state any particulars of his processes, winding up with becoming faint, having to be seated and supplied with water and smelling salts. Of his evidence, the learned judge said it had no force, as Dr. Hime declined to give details. Dr. Burney Yeo, who was called as an authority by reason of his work on 'Food in Health and Disease,' being confronted with his book, admitted that copper as a colouring ingredient or adulteration or in any other way was not mentioned in it, and eventually, as I have before indicated, the appeal was dismissed and the conviction affirmed, with costs."



## THE "CHEMICAL TRADE JOURNAL" ON THE AMERICAN OIL GANG.

IT is satisfactory to find that one journal, other than FOOD AND SANITATION, is concerning itself with exposing the game of the American oil gang; but it speaks volumes for the rottenness of our Press generally that editors devote columns daily to phonographic literature, drivel about "puff-paying snobs," the "views of T. W. Russell," and like rot, whilst they have not the intelligence—and if they had that, they are destitute of the courage—to give even a tenth of the space to the causes of the sacrifice of a life a day by the American oil gang, which they devote to abuse of vaccination, the lack of mental breath and physical backbone in that philosophic doubting *poseur*, A. J. Balfour, or the amount of principle which might be discovered in the Right Hon. A. J. Mundella by the use of the Röntgen rays. Of course, as opposed to the overpowering claims of things of such great importance, the roasting alive of three or four hundred English, Irish, Scotch, or Welsh men, women, or children yearly is a Footsian matter "of no consequence," which may explain why our Press is held in such high regard by thinking people. It acts as a tonic upon us to come across so able an article as the following in our contemporary the *Chemical Trade Journal*, on Saturday last:—

### HOW ARE THE MIGHTY FALLEN!

A change not altogether unlooked for has recently taken place in the nature of the evidence which has been given before the Parliamentary Committee inquiring into the petroleum laws. It is not the nature of the evidence we are surprised at, but the witnesses. The evidence itself, however, will afford ample indication of the how and for why.

Professor Dewar was unfortunate in having to give his evidence so soon after Sir H. Roscoe, as the contrast was all the stronger. There are only three points in his evidence, however, that call for special remark; the rest was too old and exploded to need refuting. He makes a great feature of the small number of accidents compared with the number of lamps used. We do not quite see that it proves much about the safety or otherwise of 73 degrees oil. We know this, however—twenty-five years ago gas was not used as extensively as now, and oil was not the light of the poor man only. Were there less lamps used then than now? There were certainly fewer accidents; they were almost unknown. Yet since oil flashing at 73 degrees has been introduced they have increased up to hundreds a year. Railway fatalities are few compared with the millions travelling daily, but are the precautions for safety relaxed in consequence, or Board of Trade inquiries no longer made because the proportion of accidents is so infinitesimal? Why should we therefore conclude that there is no need for the general use of a safer oil because of Professor Dewar's figures? He also speaks of experiments which show that there is little, if any, difference in safety between 73 degrees and 100 degrees oil. We need ample assurance, however, that his experiments, which give such irrational and inconsistent results, tally with the customary conditions of daily use, and that his oils were not like those used by Messrs. Abel and Redwood some years ago—prepared, instead of being trade products. Lastly, his own evidence condemns the present standard of 73 degrees as fallacious. He says:—

"If Parliament undertook legislation that would convey to the public that oil could be used safely in the present lamps, they would have to fix the flash-point at 212 degrees F."

Yet they are daily conveying this identical impression with a standard of 73 degrees F. No man of unbiassed thought can deny that raising the flash-point to 100 degrees F. would be a decided step towards safety, since that temperature is seldom attained when burning oil in lamps in this country. Professor Dewar missed an excellent opportunity of shining as a humorist when propounding his idealistic temperature of 212 degrees F.: he should have pushed his argument further until he had reached its inevitable ultimate *reductio ad absurdum*. We are seeking comparative, not absolute safety. In attaining safety 212 degrees F. would only impose a burden on the trade without achieving the object. We know quite well, and so must he, that to get a safe oil you must raise the flash-point until it will not burn at all. He has not refuted the statement that

a standard of 100 degrees or 105 degrees F. would practically secure the cessation of our daily immolations.

Professor Abel reiterated his opinion arrived at many years ago, but he does not say whether he has sought to confirm or modify his opinion by the further researches and experience of latter years. He endeavoured to explain the War Office anomaly of one standard for the Government and another for the people, but he was not very successful, for his explanation is self-condemnatory. He said:—

"The War Office on his advice used petroleum of much higher flash-point than the legal *minimum*."

Which, in common or garden language, is the *standard of safety* for the people.

"But that was because in dealing with an inflammable liquid like petroleum in barracks . . . exceptional precautions were desirable. He did not think, however, any necessity had been shown for the extension by legislation of like precautions in other directions."

So, after mature consideration, a gentleman of such parts is honestly convinced that for the oil burned in the comparatively few lamps used in barracks (which are practically isolated buildings), among men whose doings are regulated with clock-like punctuality, and who are compelled to be sober and orderly by a rigorous discipline, under which the careless use of an oil lamp would incur punishment—under such conditions as these, be it noted, "a much higher flash-point" is necessary for safety than for the oil burned in the 10,000,000 lamps said to be in use every night all over the country in crowded and over-heated rooms, by absolutely irresponsible people, who, in the excessive exuberance of alcoholic hilarity, or the callous indolence bred of poverty, perpetrate fatalities nightly under the fatuous belief that they buy and use *safe oil*—as which it is sold by nine out of ten retailers. 'Tis strange reasoning. Dr. Lunge made a point of the fact that he appeared at the request of the Hamburg Oil Company, but that he had no interest in that company, and gave his evidence independently. We should like to know more about the Hamburg Oil Company. As far as we can make out, it seems to be one of the many pseudonyms for the ever-grasping S.O. Dr. Lunge's evidence was interesting, but little else, as it throws no light on the main point—the suitability of our present petroleum laws. It is interesting to know what is being done in Switzerland; still we are not considering the laws of that country, but deaths at home—in London and elsewhere—under conditions similar to those attending the recent fatalities at one of the shops of Messrs. Davies and Evans, concerning which the chief officer of the London County Council made such striking statements. Dr. Lunge thinks that the German flash point is quite safe, though a little lower than ours is at present. So it may be—in Germany. Keep it there. Why don't they adopt it in Switzerland? It will be a bad day for England when it gets as tight in the clutches of the S.O. as Germany is. Yet such is their avowed aim. There is one other point which is important. Prof. Dewar boldly asserts that 212 degrees F. must be fixed on to convey a correct impression to the public in the matter of safety, but Dr. Lunge is content with saying that it would only be necessary to go above 120 degrees F. to insure *absolute safety*. We have expressed our opinion regarding absolute safety, but one of these two gentlemen (who so evidently look through the same glasses over this flash-point question) must be altogether out of it. Dr. Lunge's statement certainly indicates a better knowledge about petroleum, saving the word absolute.

So much for what has been. Now for a word on what is to be. It is well known that the sitting of the Committee is to be prolonged, so that some American witnesses may be called. Quite right too. It is, however, likewise quite right that the Committee should acquaint themselves with the nature of the witnesses who are to appear, and the precautions that must be taken to ensure their evidence being reliable. It is this point we wish to deal with.

This inquiry is not a law case in which "experts" can be paid to take one side, and only look one way. The witnesses must give their evidence spontaneously, as the result of their own honest investigations and convictions; and almost without exception we know this to have been the case up to now, no matter what were the views held.

Now, in any case, the Committee were well acquainted with the theory that the whole affair was nothing but a protectionist move on the part of the Scotch trade, and they, therefore, had their faces set against the Committee being used for this purpose. Yet an American oil paper that never fails to assert its claims to the rôle of an "authority" on oil matters, sullies its much-vaunted reputation with the following tissue of errors:—

"With a view to giving Scotch petroleum protection



against American oils, a committee of the House of Commons is inquiring into 'the conveyance and storage of petroleum.' English experts examined by the committee, notably Prof. Boverton Redwood, assert that the flash-point of petroleum ought to be 100 to 120 degrees. The flash-point of Scotch (shale) is 100 degrees. In the case of American oils it would be necessary to eliminate 30 per cent. of its constituents to bring it up to 100 degrees. If the standard flash-point be raised, the Scotch oil refiners will sell their produce at a higher figure. That is what the committee is for."

The committee will doubtless be incensed to think that they could be suspected of such corruption, but it should prove useful to them in showing what gross and wanton mis-statements American oil "authorities" can be guilty of, and how serious is the danger of their obtaining and giving unscrupulous evidence. Possibly they may find a salve for their wounded feelings in the fact that Mr. Redwood, who is the right-hand man of the American low-flash party, is ruthlessly saddled with supporting their opponents. That he should be made to hold the opinion he is accredited with in the paragraph we quote, only shows that the author of it cannot read or comprehend plain English.

We think, however, this justifies our statement that the future witnesses will want cautious handling. The Committee ought to take such steps as will save them being made the unwitting tools of the S.O. Co., in the same way as that relentless corporation credits them, through their organ, with fostering the interests of the Scotch trade only. If the committee can be beguiled into reporting in favour of leaving the standard at 73 degrees F., there will be some "bonuses" to be distributed, and the committee should learn something of the channels they are likely to fall into. The Americans know to their own cost that when one hand alone can absolutely control a sum like 150,000,000 dollars a year, the controller in some subtle and discreet way can endow even Justice herself with Röntgen-lit eyes, so that she can see clearly through her bandage to deftly adjust her scales, notwithstanding that at the same time she manifestly appears blindfold to the unsuspecting. The same hand is not idle now, though it does its work insidiously and tortuously. We can recite a tale worth telling, should it be necessary, about the way some of the low flash evidence is got. We think we have said enough, however, for the committee and the present. Still, we cannot but feel that if the true history and aims of the powers that are now fighting for the low standard were known to the committee, they would report in favour of raising the standard, if only to rob chicanery and the other "c" of its victory. When one of the witnesses trotted out his iron reservoir fad in the face of all the lamp makers' direct evidence, the chairman was gracious enough to say that the suggestion should find a place on the minutes. May the above sentence be afforded the same in the minds of the committee—such is our humble memorial.

As the Rt. Hon. Anthony J. Mundella, like his namesake of saintly renown, is a model of honesty and public spirit, and as full of regard for the well-being of the public, who have contributed so largely to his support, as he is full of unctuous and big-bearded respectability, we do not doubt that he will weigh well the observations of our contemporary. It may in some measure atone for the little business preceding his Board of Trade resignation if he does.

#### THE ADULTERATION COMMITTEE'S REPORT.

THE following is understood to embody the recommendations of the Select Committee on the Food and Drugs Acts.

According to the *Pall Mall Gazette* the Committee are of opinion that the evidence shows that the greater the number of samples taken for analysis, the less adulteration there has been. As to the general results of the administration of the Acts, it appears to have been borne in upon the Committee that in some cases injustice has been done to retailers through being convicted of adulteration for which the wholesale dealers were responsible, and on this point the Committee think that an extension of the Acts to wholesale dealers is needed.

The frequency with which coffee and chicory and other mixtures are sold so as to lead the purchaser to believe that he is buying an unmixed article is com-

mented on, and suggestions are made that all mixtures should be properly labelled, and in such a manner that the contents cannot be mistaken. As to the condensed skim milk, it is recommended that words should be printed on the labels of the tins indicating that the contents are not nutritious or suitable for children. The Committee review the use of warranties and existing powers for stopping foreign adulterated articles at the port of entry, and certain recommendations are made for the more effectual use of these powers; and the power of taking samples of milk in transit should, it is recommended, be extended to other articles.

The taking of samples by private purchasers for analysis is regarded as such a good thing that the increase of the practice is recommended; and in the taking of samples by officers it is suggested that officers should adopt precautions to preserve their incognito. On this point it is recommended that Section 14 of the Act of 1875 should be so amended as to require that the article, after purchase, should be divided into four parts, one to be retained by the retailer, and three taken charge of by the officer taking the sample. On the officer being informed by the retailer that in defence he proposes to plead the warranty furnished to him with the article which forms the subject of the proceedings, the officer is to forward one of the samples retained by him to the wholesale dealer. More stringent measures are recommended against the givers of warranties, who shield the retailers thereby and yet escape themselves. There is ground for the statement that inexplicable leniency has been shown by magistrates in dealing with adulteration offences. The profits derived from the sale of adulterated articles are sometimes so great that offenders are not deterred from repeating the offences by the insignificant fines imposed. After careful consideration of the matter, the Committee have come to the conclusion that the punishments which as a rule have been inflicted for offences under the Acts have not been sufficient to render them effective for the purpose for which they were designed. The Committee therefore recommend that for the second offence under the Sale of Food and Drugs Act a penalty of £5 be prescribed, and that in respect of the third or subsequent offences under those Acts and the Margarine Act of 1887 the punishment of imprisonment without the option of a fine may at the discretion of the magistrates or court be inflicted. This recommendation is, however, made subject to the understanding that the proposition of the Committee referred to in the preceding paragraph (as to the prosecution of the givers of warranties) is given effect to. As an additional punishment for adulteration offences, it has been suggested to the committee that offenders should be required to publish at their own expense a notice of their conviction in the public journals of the locality in which their places of business are situated, or otherwise as may be thought desirable to give due publicity to the conviction. The committee think that if this proposition were carried into effect it would serve as an effective check upon adulteration offences, and they therefore recommend its adoption. They think, however, that it should be left to the discretion of the magistrate before whom the case is heard to decide whether or not the conviction should be advertised in the manner proposed, if so, to make an order accordingly.

Upon the question of food standards, the committee recommend that the word "food" in the Acts should be defined so as to include expressly "all articles intended to enter into or to be used in the preparation or flavouring of food." Also that there should be a legal standard or definitions of articles of food. The committee think that there is substantial reasons for dissatisfaction with the existing provisions of law on this subject, under which questions as to the composition of food, and the legitimacy of trade practices in the manufacture and preparation of foods are discussed and decided by tribunals which are



seldom in possession of sufficient data for the satisfactory decision of such questions. "It appears to the Committee that it would greatly facilitate the working of the laws as to adulteration of food, and also serve the interests of the traders, if standards or definitions of foods were promulgated by a competent authority." Such questions should be referred to a new court of reference which they recommend should be constituted. They point out that the suggestions made have for the most part contemplated the formation of a body independent of any Government department, but the Committee think it would be preferable to avoid separating the proposed court of reference from a Government office. They, therefore, recommend that it should be a standing departmental committee appointed by the Board of Trade, and that it should consist of the principal officer of the Government laboratory at Somerset House, *ex officio*, nominees of the Local Government and the Board of Agriculture, and one or more analysts of repute, together with representatives of the General Medical Council, the Institute of Chemistry, the Pharmaceutical Society, and other scientific men whose services to analytical research entitle them to a place on the proposed body, to which would be added a representative or representatives of the trading community. A special part of the report is devoted to the discussion of the variety of adulterations of milk and butter; and the extensive frauds in the substitution of margarine for butter, and in mixing the two articles, are dwelt upon, and extreme steps are urged (as will be seen from the recommendations which follow) to penalise such practices. And it is recommended that all margarine factories shall be registered, also the dealers in the same, and that margarine should be packed in a prescribed form, and in special boxes different from butter boxes.

The Committee's views on the principal points are epitomised in the following summary of recommendations:—

1. That in districts other than county boroughs where the local authorities fail to put the Acts into force, the County Council should, by their own officers, take samples for the purposes of the Acts.
2. That in connection with the sale of mixed articles it should be obligatory upon the vendor to supply the purchaser with a label setting forth that the article is mixed.
3. That the statement of admixture on the label should be legibly and distinctly printed, so as not to be obscured by other printed matter, and that existing labels should be subjected to the proviso mentioned in the paragraph in this report relating to the labelling and sale of mixed articles.
4. That subject to the limitations indicated in the report, invoices and equivalent documents should have the force of warranties in the case of all articles to which the Sale of Food and Drugs Act apply.
5. That the Commissioners of Customs be authorised to examine and take samples of all food imports at the port of entry with a view to subsequent action as indicated in the body of the report.
6. That dealers who obtain supplies of food from abroad should be required to submit to the Customs guarantees of purity given by the foreign vendor, together with evidence that they have taken measures to see that the goods are such as they are guaranteed to be.
7. That retailers should be empowered to refuse to sell an article otherwise than in a manufacturer's labelled tin or box.
8. That the powers of Section 3 of the Sale of Food and Drugs Acts Amendment Act, 1879, as to the taking of samples of milk in transit should be extended to other articles.
9. That the maximum penalty for refusal to sell a sample to an authorised officer be increased.
10. That the division of the sample after purchase

and the delivery of a portion to the vendor should be compulsory.

11. That the sample should be divided into four instead of three parts, and that one of these parts should be at the disposal of the wholesale dealer.

12. That the provisions of Section 5 of the Margarine Act, 1887, as to the exemption of the employer from penalty in certain cases and punishment of the assistant should be extended to offences under the Sale of Food and Drugs Act.

13. That it should be obligatory upon magistrates or the court to refer articles to the Government laboratory for analysis when such a course is desired by either of the parties to the case.

14. That a defendant who proposes to rely upon the warranty defence should be required to intimate this to the prosecutor within a reasonable time of the service of the summons.

15. That the time allowed for appeal to quarter sessions from decisions of local justices should be extended from three to fourteen days.

16. That any person guilty of a second offence under the Sale of Food and Drugs Acts should be liable to a minimum penalty of £5, and that in respect of the third or subsequent offences under those Acts and the Margarine Act, 1887, the punishment of imprisonment without the option of a fine may be inflicted at the discretion of the magistrates or the court.

17. That magistrates should be authorised to make orders at their discretion requiring a person convicted of offences under the Acts to publish a notification of his conviction in the public press of the locality where the offence occurred.

18. That the definition of the word "food" as used in the Acts should be amended so as to include expressly all articles intended to enter into or to be used in the preparation or flavouring of food.

19. That an authority should be constituted and should act as a court of reference upon scientific and other questions arising under the Acts, and shall be empowered at their discretion to prescribe standards and limits of the quality and purity of food.

20. That candidates for appointment as public analysts should be required to produce evidence that they possess the requisite knowledge of analytical chemistry, in the shape of a diploma or certificate given in respect of such knowledge by a recognised school of chemistry or scientific examining body, and that in the case of candidates other than duly registered medical practitioners, specific tests of the requisite knowledge of microscopy and the bearing of adulterations upon health should be prescribed.

21. That the remuneration proposed to be given to a public analyst should be subject to the approval of the central authority.

22. That the artificial colouring of margarine to resemble or to imitate butter be prohibited.

23. That the mixing for sale of margarine for butter be prohibited.

#### MARGARINE TRADE RESTRICTIONS.

The Press Association learns that the majority of the representatives of agriculture on the Select Committee upon Adulteration of Food Products have altered the draft report of their chairman (Mr. T. W. Russell), with a view to increase the restrictions upon the margarine trade. One clause of the report proposed that margarine might be coloured, so long as the colouring matter was not deleterious, or added for the purpose of fraud, but this was rejected by eleven to five, and a clause substituted to forbid any colouring of margarine, either in imitation of butter or otherwise. Another clause recommended that the admixture of margarine and butter might be permitted, provided it was sold as a mixture. But this was also rejected by a similar vote, and such mixture declared to be illegal. It was further agreed to recommend that the regula-



tions as to the labelling of margarine should be made more stringent, and that margarine factories should not only be registered, but subject to official inspection in order to see that no objectionable ingredients were used in the manufacture. Another meeting of the Committee will be held to consider some postponed points. The draft report of the chairman numbers about 300 clauses.

### CHESHIRE CHEESE.

#### "A DYING INDUSTRY."

At a meeting of the Cheshire Agricultural Society held at Chester on Thursday, for the purpose of making arrangements for the coming show at Chester, the Mayor (Mr. B. C. Roberts) said he had received the following letter from Mr. F. Baxter, South-Eastern Wharf, Southwark, London, E.C.:—"I have been an adherent to Cheshire cheese so long as I could get it. At last comes the intimation from one of the principal supply stores in London to the following purport:—"With reference to your order to hand this morning, I regret that we are unable to procure any good Cheshire cheese; we have been compelled to take same out of the list." I venture to make this known to you, as it appears to me to be very sad." The Mayor explained that he had sent a copy of the letter to the Cheshire Chamber of Agriculture and the Dairy Farmers' Association. He must say, with all due deference to anyone's remarks, that he thought Cheshire cheese was a dying industry. One could not get one in London fit to eat.—The Sheriff (Mr. Holmes) said he had been told that the provision merchants could not sell Cheshire cheese in London.—Mr. W. E. Lea (Tarvin) remarked that he thought as good Cheshire cheese was made now as there ever had been.—The meeting decided to have a demonstration in cheese and butter-making at the Chester show.

### MEAT.

At Worship-street, on July 7, Charles Frederick Scheklein, pork-butcher, Roman-road, appeared to answer a summons charging him with having deposited for sale a quantity of meat which was unwholesome and unfit for human food.—Mr. Leycester and Mr. Muir appeared to prosecute on behalf of the Poplar Board of Works, and Mr. Margetts defended.—In opening the case, Mr. Leycester said the proceedings were taken under the Public Health Act, 1891, by which the defendant was liable to a fine of £50, or imprisonment for six months. Defendant carried on business in Roman-road, Bow, as pork-butcher, selling, besides meat, such things as sausages, saveloys, and an East-end delicacy known by the name of "faggots," made chiefly of pigs' lungs, well seasoned. On June 18, Mr. Boyce, one of the sanitary inspectors, visited defendant's premises and found a quantity of beef, mutton, pork-sausages, faggots, &c., utterly unfit for food. The things were in various parts of the premises, bad meat, in some cases, being found in the same tub as good, bad pork in a baking-tin with good faggots, good and bad saveloys mixed up together, etc., showing, as the learned counsel contended, that this stuff was not put aside to be dealt with as offal, as defendant had stated with reference to one portion of the bad meat, which, he said, was put on one side for the purpose of having the fat cut off; in fact, some of the workmen were found in the act of cutting up putrid meat in pieces suitable for the mincing machine, from which sausages, saveloys, etc., were made.—Mr. Boyce and other witnesses were called to bear out the opening statement.—For the defence, Mr. Margetts submitted that defendant had only taken the premises some six weeks before the inspector's visit. In order to make a show, he had bought more meat than he found he could sell, and a large quantity had to be salted; but this had been insufficiently done by one of the men, whom he thereupon discharged, and who then gave information which led to the present proceedings. He called the defendant, who said that on the occasion of the inspector's visit he had pointed out to that officer that the meat was bad, and he was simply separating the fat because it commanded a better price. He (witness) had condemned all the meat himself, and had no intention whatever of selling it as food. No amount of "seasoning" could have made it saleable as food.—In the result, Mr. Corser imposed a fine of £10, with five guineas costs.

### A TEN-SHILLING COW.

HENRY MILLER, a butcher and farmer, of Market-square, Hailsham, Sussex, was summoned at Clerkenwell on July 10 by Sanitary-Inspector Billing, of the Holborn Board of Works, for depositing for sale at the premises of a meat salesman four quarters of beef which were diseased and unfit for human consumption.—Mr. Dale, solicitor, prosecuted.—The inspector seized the meat on the 20th May, and found it to be the carcase of a young cow. The flesh was very emaciated, wet, and sodden and full of evidence of tuberculosis.—Dr. Bond, medical officer of health, corroborated.—A police inspector from Hailsham said he had interviewed the defendant, who stated that he bought the cow for 10s., and sent it to London, intending it for cat's meat.—Mr. Horace Smith said he was satisfied that the defendant had tried to palm off his 10s. cow on the human beings in London and the human beings of London must be protected. He imposed a fine of £25.

### MILK.

At Brentford, on July 11, G. White, of Brentford, a milk-seller, was fined £4 for selling milk adulterated with 11 per cent. of added water. Defendant pleaded that his assistant had been dishonest, and had added water to the milk after its removal from the shop. Inspector Tyler said that defendant had been fined large amounts for similar offences prior to 1893, but since that time all samples taken of his milk had been good. The chairman said that there was no doubt that defendant had been victimised by his assistant, but he (the defendant) was liable for the sins of his employees.

At Blackburn, on July 8, John Ormerod, farmer, of Dorebooth Farm, was summoned at the instance of Frederick Poole, inspector under the Food and Drugs Act, for "extracting from certain milk 33 per cent. or thereabout of cream, with intent that the same should be sold in its altered state."—Mr. J. W. Carter prosecuted, and Mr. Clough appeared for the defence.—Frederick Poole, the inspector, spoke to purchasing a pint of milk from the defendant's daughter, and sending it to the county analyst, Dr. Brown, whose certificate he produced. This document stated that the sample sent him was "deficient of cream by one-third the average amount."—Mr. Clough took technical objection that the inspector on purchasing the milk did not divide it into three parts, and retain one himself.—Mr. Carter said the analyst had divided the milk, and that was sufficient.—The Bench over-ruled the objection.—Mr. Clough then called defendant and two of his sons, who stated that no cream was taken off the milk by them, but that the milk went out just as it came from the cow.—The Bench imposed a fine of 20s. and costs.

At Cambridge, last week, Charles Robert Crack (37), dairyman, of Cherry Hinton-road, Cherry Hinton, was summoned for having in his possession, on June 8, a quantity of milk from which he abstracted the cream, with intent to sell it as new milk.—Mr. G. S. Todd (Messrs. Whitehead and Todd) prosecuted, and Mr. Squires defended.—Inspector Taylor said on June 8 he was on duty in Regent-street. He saw a man named Arthur King delivering milk from a can. He spoke to him and asked him if he was selling new milk. He then asked him to supply him with a pint of new milk. He told him that he had none to spare. Witness informed him that he wanted some for analysis. King asked him what he was going to put it in. Witness took three bottles from his pockets and a glass funnel. He filled the bottles from the funnel and paid him 2d. for the milk. Witness, after filling the bottles, asked King to take one to his employer. Witness told him that he should submit one of the bottles to the public analyst for analysis. He sent one of the bottles to the public analyst that morning. He subsequently received an analysis which stated that the sample had been adulterated by having 33 per cent. of its fat taken away.—Mr. Squires pointed out the difficulty of keeping the milk and the cream in such proportion that each customer gets a fair share of the cream. The frequent dipping in of the measures into the can certainly abstracted cream from the milk. The fact of the case was that King had been supplied with milk as usual by his master on the morning in question. Finding himself short of milk, and being a long distance from home, he went to the nearest milk shop and bought some milk to finish his rounds, and he had only sold one lot of his milk when the inspector called upon him for a sample.—Mr. Squires agreed to an alteration in the summons so that it read "for selling the milk as altered."—Arthur King, milk-carrier for Mr. Crack, stated that on



Monday, June 8, about 7 in the morning he served his rounds as usual. Running short of milk he went to Mrs. Smith's, Station-road, for  $1\frac{1}{2}$  gallons of milk. He paid 1s. 6d. for it, and went to Regent-street. On going down Regent-street the inspector asked him for a pint of new milk. Witness told him he could not let him have it as he was short. He afterwards gave him some, as the Inspector told him he wanted it for a sample.—Cross-examined, witness said the Inspector did not say that he wanted the milk for analysis.—The Chairman said they were bound by the analysis to come to the conclusion that the milk was adulterated.—The defendant was fined £1 and costs.

#### A BRISTOL MILK CASE.

SUSAN DAVIE, of 43, Castle-street, was summoned by William Beer, Inspector of Foods and Drugs, at Bristol, on June 10, for selling milk containing 5 per cent. of added water. The certificate of the City Analyst, put in at a former hearing, was to the effect that the milk contained 5 per cent. of added water. Mr. H. R. Wansbrough, who represented the defendant, had obtained an adjournment in order that a sample of the milk might be sent to Somerset House, whose analysis showed not less than 4 per cent. of added water. Mr. Wansbrough asked the magistrates not to convict, stating that the defendant had traded for upwards of 30 years without complaint, and bought the milk of a very respectable farmer in North Somerset. He called witnesses, who proved that the milk was sent straight from the cow to the defendant, who stated that she sold it exactly as received. The magistrates, without convicting, ordered payment of the court fees and the charge for the Somerset House analysis.

#### ADULTERATION IN LIVERPOOL.

WILLIAM AMBROSE, 3, Rydal-street, was fined £3 and costs on July 8, for selling as new milk an article containing twenty parts of water to every hundred parts of milk; £1 and costs for selling milk to which twelve parts of water had been added to each hundred parts; and 10s. and costs for selling skim milk containing 5 per cent. of water. Defendant stated that he sold the milk as he received it, and had since obtained a guarantee of purity.—John Johnson, 2, Elsmore-street, was fined £2 and costs for selling as new, milk which had been deprived of two-fifths of its cream.—William Challoner, 98, Breckfield-road North, was fined 5s. and costs for selling a mixture composed of four parts of water to every hundred parts of the poorest milk.—John M'Manus, 77, Netherfield-road North, was fined 20s. and costs for exposing unlabelled margarine for sale; and Frederick Wooselman, 64, Holt-road, was fined 10s. and costs for a similar offence. Inspector Baker proved the cases.

#### A LEEDS MILK CASE.

At the Leeds Police Court, on July 14, before Mr. Stipendiary Atkinson, Caroline Espin, 88, Kirkgate, was summoned for selling one gill of new milk which the city analyst certified to contain 11 per cent. of added water. The defendant, in defence, stated that she sold the milk as she received it from a man named Green, who she heard had been heavily fined for adulteration. His Worship was of opinion that she was a victim of the farmer, and thought the case would be met by a small fine of 7s. 6d. Inspector Walker prosecuted.

Koch found that anthrax spores were absolutely unaffected by lying for 110 days in a 5 per cent. solution of carbolic acid in oil.

#### THE SEIZURE OF TINNED MEAT.

JOSEPH FELS, an eating-house keeper, of 188, White-chapel-road, again appeared before Mr. Mead on July 11 to answer two summonses charging him with having in his possession a quantity of unsound food intended for the use of man, including 1,529 tins of potted tomatoes, other fruits, salmon, lobster, sardines, oysters, haddocks, tongues, rabbit, and beef.—Mr. Muir prosecuted on behalf of the Mile-end Vestry, and Mr. Grain and Mr. Crowe defended.—The defendant, further cross-examined, said he had brought no books, and had not any invoices for 1894. He was an honest dealer in tinned goods, and would not sell anything bad. He had bought blown salmon from Mr. Hooper, and treated them as bad. They were sent to Mr. Webster as manure. He bought doubtful tins because a little profit attached to them. He sold to restaurants in the East-end of London, and he sold them both sound and defective goods. It would be impossible to sell blown food, which he had bought for manure, for human food. He had not bought 500 cases of beef for manure and sold it for food. In 1892 or 1893 he bought some 200 or 250 cases of beef at Hall's Wharf, and a few of those were bad. In 1893 he wrote to the superintendent of that wharf, giving an undertaking that he should only use the beef for manure, but he did not do so. In December, 1893, in the presence of Mr. G. Nixon and Mr. Peter Johnson, he wrote a retraction, and said that the statement he made to Messrs. Dunn and Co. was not correct. They did not threaten, if he did not do so, to send for a policeman. The meat in the tins was good, but it was not quite an honourable transaction. With regard to the seizure by the medical officer, he assisted in sorting the tins, and admitted that they were bad. The next day he cleared out four or five cwt. of other tins, and they were sent for manure.—By Mr. Mead: All the tins on his premises were old stock, which he had bought as sound goods. He kept them until they deteriorated, and he allowed them to be condemned, because he was a bit nervous.—William Walter, the defendant's cook, stated that he had never heard any of the customers complain about the food. The tins of meat that he used for the soup were always good.—Mr. Fred. G. Kennedy, wholesale and export merchant, said he had extensive dealings with the defendant, and had never had more complaints about his goods than he had of any other dealer.—Mr. Mead adjourned the case.

#### OUR SANITARY PREMIER.

THE case of the Attorney General *v.* Kirk came before Lord Justices Lindley, Lopes, and Rigby, on July 8, in the Court of Appeal. The plaintiff appealed from an order of Mr. Justice Kekewich of the 2nd inst., refusing an injunction to restrain an alleged nuisance by allowing an excavation or trench in Little Newport-street, near Daly's Theatre, to remain open, and from allowing the footway on the south side of the street to remain without a proper pavement. The defendant Kirk was a contractor, and in 1891 had an agreement with Lord Salisbury for the erection of buildings on a vacant space of ground in Little Newport-street. The Strand District Board of Works, who now set the Attorney General in motion, granted a license, which expired last December, to Kirk to erect a hoarding in the street, and to open the public way. Under this power Kirk made the excavation complained of. In October of last year the building operations ceased, and matters were now at a standstill. It was alleged that in consequence of Kirk having failed to carry out the building agreement, Lord Salisbury determined it, and obtained possession. Kirk contended that Lord Salisbury was responsible.

Mr. Buckley, Q.C., and Mr. Methold appeared for the appellant; Mr. Horace Kent and Mr. Allan Maclean for the respondent.

Their lordships allowed the appeal, and granted an in-

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FINEST CHOCOLATE ALMONDS,  $\frac{1}{4}$ lb. boxes 6d. and  $\frac{1}{2}$ lb. boxes 1s.

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junction against Kirk permitting the trench (in which it was admitted there was an accumulation of water, which was a nuisance) to remain open as a danger to the footpath, sewer, or adjoining houses. The injunction also went against allowing the stagnant water to remain in the trench so as to create a nuisance.

Which means in plain English that Lord Salisbury gets Kirk to pull down his slums, and expend a few thousands of pounds, and then coolly ousts the confiding builder. The law gives him a chance, however, of making his victim drain his land, and his lordship seizes it. He is a generous, manly and open-hearted English gentleman is Lord Salisbury, and Kirk must be an ungrateful fellow not to feel and express pleasure that his lordship has left him even as much as a shirt.

### BAD MEAT CASES AT BIRMINGHAM.

WILLIAM J. BLAND, wholesale meat salesman, was summoned, on July 7th, for exposing thirty-four beeves' hearts and twenty-four livers for sale, the same being unfit for human food. Mr. Hiley, from the Town Clerk's office, said that the Markets and Fairs Committee did not regard it as a very serious case. Dr. A. Hill (medical officer of health) said the hearts and livers were unfit for food. Mr. O'Connor, who defended, explained that the hearts and livers had been received on the morning of the seizure from Birkenhead, and had been in the refrigerator. They were found on the stall in the Smithfield Market before defendant had had time to examine them. A fine of £5 and costs was imposed. — John Phillips, 169, High-street, Deritend, was summoned for exposing for sale seventeen beeves' hearts and three sheep's livers which were unfit for human food. Dr. Hill described the hearts and the livers as in a very bad state of decomposition. Mr. Baker, who defended, stated that the meat was only purchased on the day before it was seized, and owing to the very hot weather it had become sapid. Mr. Colmore, the Stipendiary, was called to give the defendant a good character. He said he had known his family as respectable and hard-working. The defendant had had very hard luck, and witness was sorry for him. He had saved money with a view to getting married, and opened the shop in High-street, where burglars broke in and stole everything he had. Mr. Harding said he did not know that they were justified in dealing with the defendant as leniently as they had done in the previous case, but he would be fined £5 and costs. — George Edward Clent, manager of the Midland Meat Stores, Jamaica-row, was summoned for exposing for sale ten pigs' tongues, and also with having deposited in a cellar and intended for sale forty-one pigs' tongues. Inspector Hothersall spoke to finding the tongues, which were pickled, and had been imported from America. The ten tongues were in the shop, and the others in a barrel in the cellar. Dr. Hill said that forty-one pigs' tongues were in a strong brine, but they were badly decomposed. Mr. Jaques, who defended, stated that the instructions of the company to their managers was not to sell anything which was bad as good. The defendant was called, and said that after the barrel of tongues was opened the brine was changed, as it was thought the condition of the tongues would thereby be improved. The tongues had been in stock for several months, and one barrel had been opened for about five weeks. He was not aware that the tongues were bad. A fine of £5 and costs in each of the two cases was imposed.

### THE TUBERCULOSIS QUESTION.

THE Queen has been pleased to issue a Commission "to inquire and report what administrative procedures are available and would be desirable for controlling the danger to man through the use as food of the meat and milk of tuberculous animals, and what are the considerations which should govern the action of the responsible authorities in condemning for the purposes of food supplies animals, carcasses, or meat exhibiting any stage of tuberculosis." The Commissioners appointed are Sir H. E. Maxwell, Mr. R. T. Thorne, C.B., Medical Officer of the Local Government Board, Mr. G. T. Brown, C.B., Mr. H. E. Clare, Mr. S. F. Murphy, M.R.C.S., Mr. John Speir, and Mr. T. C. Trench. The secretary of the Commission is Mr. T. M. Legge.

We trust the committee will do justice to the victimised butchers in this, and recommend compensation for tuberculous cattle.

### LORDS AND LEAD POISONING.

At the instance of the Sanitary Committee of the West Riding County Council, the Law and Parliamentary Committee pressed upon the Local Government Board, and upon the Committees of both Houses of Parliament, the subject of lead poisoning. On several occasions they had met with conspicuous success, especially in regard to the Barnsley and the Sheffield Water Bills of this session, when provisions were inserted which satisfied the committee. When the Huddersfield Water Works Bill came before Parliament, the Local Government Board, in a supplementary report, stated that waters which were likely to be collected in the two reservoirs might be classed among those moorland waters which produced lead poisoning at uncertain intervals. The Local Government Board, therefore, suggested that the committee should be satisfied as to the precautions proposed to be taken to protect the consumers from lead poisoning. The board also submitted for consideration whether it was not desirable that provision should be inserted in the Bill requiring the water supplied from the two reservoirs to be so treated as to secure it against the deleterious action on lead before it was delivered to the consumers. That report was dated May 23rd, 1896. The Law and Parliamentary Committee considered that they could safely entrust this clause to the Local Government Board and the Committee. The Lords' Committee, however, had not taken the view indicated, but had passed the Bill without the adequate provision which had been thought necessary. In former times he (the chairman) should have expressed his surprise at the action of the Lords' Committee, but two or three years' association with those committees, and his knowledge of what went on, made him unwilling to do so. (Laughter.) It was very disappointing indeed that the recommendations of the Local Government Board should be so disregarded. The County Council had taken up the question of lead poisoning and submitted it to the Local Government Board. The result was a report which took five years to prepare, and therefore it ought not to have been dismissed so lightly as it had been.

To their many claims upon public favour may now be added that of lead poisoners. Our House of Lords is truly a blessing.

### MOUTH-FILLING PHRASES.

In an address delivered to medical students, Dr. Edmund Andrews, of Chicago, makes no end of fun of the swollen, tumid style in which medical articles are not infrequently written. To the average man the vocabulary of a learned gentleman, when paraded in the columns of a medical journal, is fearful and wonderful to behold. During a post-mortem examination, one physician found a large cancer of the liver. His report read: "A colossal carcinomatous degeneration of the hepatic mechanism." Your man of solemn and ponderous speech does not keep a set of instruments—not he—he has an "armamentarium." His catheters never have a hole or an eye—always a "fenestrum." A hole in his patient is a "perforation." Disease he always "differentiates or diagnosticates." The patient's mouth is an "oral cavity;" his jaw is a maxilla; his brain is a cerebrum; his hip-joint is a coxofemoral articulation; if his eyelids are adherent, it is a case of ankylo-symblepharon. If he discovers wrinkles on the skin, they are corrugations or else rugosities. He does not examine a limb by touch or handling—he palpates or manipulates it. If he finds it hopelessly diseased, he does not cut it off—that is undignified; he gets out his armamentarium and amputates it.

SOME time ago the district medical officer of Poplar and Bromley (Dr. Alexander) suggested to the Millwall Dock Company that they should plant a large mud heap, composed of river dredgings, belonging to them in the East Ferry-road, with willows, which he said would not only save the Company the expense of using disinfectants, but would purify the ground by a natural process, besides creating a new industry in the district. The novel proposal was acted upon by the dock company, and two acres of the 50 which comprised the land were planted with 10,000 willow plants—6,000 for coarse basket work, and 4,000 for fine articles. Dr. Alexander, in his annual report, just issued, records the great success of the experiment, especially from the point of view of the public health, and mentions that the planting of osiers on a large scale in North Western India has assisted to stamp out malaria in a notoriously unhealthy valley carried with stagnant pools.



## MUSTARD ADULTERATION.

At New Mills Petty Sessions on July 8, Harriett Warrington, grocer, Church-road, New Mills, was summoned by Colonel Shortt, inspector under the Food and Drugs Act, with selling a quarter of a pound of adulterated mustard. The mustard was sold out of a tin which was properly labelled, but defendant had omitted to label the same package sold to the inspector.—The Bench were sorry the case had been brought, but imposed a fine of 1s., and £1 1s. costs.

## MANGOTSFIELD SEWAGE SCHEME.

MR. F. H. TULLOCH, Inspector of the Local Government Board, has recently held an inquiry into the application of the Warmley District Council for sanction to borrow £17,000 for works of sewerage and sewage disposal for Mangotsfield.

The engineer for the scheme, Mr. Walter le Maitre, of Staple Hill, gave particulars of the scheme, which combines the latest improvements for the scientific treatment of the sewage by means of precipitation in circular tanks, fitted with Candy's patent sludge removal apparatus, clarifiers, and filtration through Polarite beds.

There was a large attendance of ratepayers at the inquiry, and expert evidence was given in support of the scheme.

## THE FOOD SUPPLY OF OYSTERS.

At a recent meeting of the Philadelphia Academy of Natural Sciences, Dr. Charles S. Dolly described a centrifugal apparatus, which he called a planktonokrit, for the quantitative determination of the food supply of oysters and other aquatic animals. By means of its use he is enabled to make a large number of plankton estimates in a day, and thus judge of the characters of given areas of water in connection with fish and oyster culture at different times of the day, states of the tide, varying depths, etc. The method employed is that of the centrifuge, an apparatus which consists of a series of geared wheels driven by hand or belt, and so arranged as to cause an upright shaft to revolve up to a speed of 8,000 revolutions per minute, corresponding to 50 revolutions per minute of the crank or pulley-wheel. To this upright shaft is fastened an attachment by means of which two funnel-shaped receptacles of one litre capacity each may be secured and made to revolve with the shaft. The main portion of each of the receptacles is constructed of spun copper, tinned. When caused to revolve for one or two minutes the entire contents of suspended matter in the contained water is thrown to the bottom of tubes properly placed, from which the amount may be read off by means of a graduated scale.

## CORRESPONDENCE.

## DAIRYMEN AND THE NEW ADULTERATION ACT.

*To the Editor of FOOD AND SANITATION.*

SIR,—Would you kindly allow me to say a few words about our position as dairymen under the Food and Drugs Act? We are very anxious at the profound silence respecting any change in the powers of the inspectors to take samples out of their district, and as this is the only practical way that honest dairymen can be protected this silence is very oppressive. There are four or five railways in this neighbourhood all bringing milk to be sold here. The dairyman retailing this milk is responsible for it, and it is a very hard case when the adulteration is done before he receives it. The inspector not being able to go out of his district makes the Act of 1879 only partially successful. The dairyman is bound to suffer under these circumstances. The public interest is also bound to suffer. Adulteration is fostered, and the adulterator is protected, while the dairyman is victimised in heavy fines and costs. An offence is committed when adulterated milk is sold in a district, and it is only common-sense to say the authorities should have power to reach the adulterator. It is really absurd to think the farmer can screen himself behind a city boundary line. I say, in common fairness to the dairyman, the inspector should trace adulterated milk to its source. For years this principle has been endorsed by our authorities, and they understand this question. It has been endorsed by the Society of Public Analysts. It was the first resolution passed at the Conference of Vestries and Local Authorities

of the Metropolis in June, 1894, held at St. George's, Hanover-square. Milk cases would be in the hands of one authority, and all samples would be analysed by one analyst and one method. Without this protection, the new law will be, like the old law, a wicked and unjust law.

Yours, etc.,

ROBERT EDGE.

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 335.)

When I heard for the first time that besides the Standard Oil Trust, there are persons which wanted to "regulate" only the lamps and not the oil, and before the "Report on Petroleum" brought the views of Spencer to my knowledge, I represented to myself that the use of existing lamps would certainly also definitely be prohibited also by means of expropriation. It is true that it was not quite clear to me how this could be carried out rationally without much trouble. But this would be the care of the law and the authorities. But if this is not done, and Spencer does not require it, then the present state must remain for many years to come, "for London, one killed per week; for England, one per day," as it is mentioned shortly and clearly. The use of petroleum is daily increasing, and paraffin lamps have a long life. Now, should this secondary movement not lead Spencer to advocate the movement which endeavours to obtain a raising of the flash point instead of weakening it, since it would considerably improve the state of matters—one may say definitely. Let him fight at the same time for the introduction of safety lamps; the one does not exclude the other, and the two standpoints do not stand against each other as antagonistic, as one must think from the behaviour of Abel, Redwood, and Spencer. Let them begin with the raising of the test, and afterwards it can be seen if the lamps must also be regulated. That is a logical, rational procedure. One has the right to require from the three gentlemen the reason why the raising of the test to 40 degrees should not take place. I have already touched the question of the possible raising of the price of the oil, and will return to it later on. It is impossible to make it a cause against the raising of the test. By means of their fighting for safety lamps as the only measure, they advocate, of course unconsciously, the interests of the powerful Standard Oil Trust.

The advocates, from the standpoint of "only safety lamps," simply turned the question upside down. They start from the pre-supposition that we are bound to the oil containing 6 to 8 per cent. naphtha, and then they say—given an oil of 73° F. (Abel), which already (*N'en déplaise* Spencer) at an ordinary temperature gives off easily inflammable vapours; asked the lamps and cooking apparatus suitable for its use. E. C. Stanford (*Journ. Soc. of Chem. Ind.*, 1893), Edinburgh discussion, has likewise expressed it plainly: "He considers all safety lamps as a confession of weakness. The safest lamp will always be the one which burns the safest oil. A safety lamp attacks the problem at the wrong end."

I refer to some experiments of Spencer, from which arise, among other things, that oil of higher test develops more heat than that of lower test, only because one of the members of the Commission, Jacks, calls the result a "most interesting point," and Spencer refers to the previously-mentioned report of Abel and Redwood. The question here is only of unimportant differences of temperature at the three trials of petroleum of 110°, 91°, and 82° F. (Abel test); but the most beautiful thing is, that if one makes the calculation correctly and takes into consideration the temperature of the



room—the trials lasted for five hours—there does not exist any difference at all in the final temperature of the three oils. Considering the small importance of this point, it is not necessary to discuss it further.

Besides, it is evident from Spencer's declarations before the Commission of Parliament that he, as regards the question of the flash point of petroleum, cannot possibly be considered an expert. Concerning the questions in connection with the construction of lamps, everybody will willingly acknowledge his knowledge; but as regards the oil, he shows a want of knowledge which is almost wonderful for a person who is daily occupied with petroleum accidents and judgments thereon. He evidently does not know that the oil in daily use contains from 5 to 8 per cent. naphtha. He asserts that this oil does not give off any inflammable vapour under  $100^{\circ}$  F., and is therefore safe. He does not know either that in lamps for lighthouses the oil with low test cannot be used on account of the danger (Nos. 522, 523). He does not know either that the "War Department" uses only oil of  $100^{\circ}$  to  $105^{\circ}$  F. (Abel test, 524). He is evidently no chemist, so that his one-sided fighting exclusively for safety lamps is sufficiently explained. But then his assertion that the Abel test of  $70^{\circ}$  F. is "a perfectly satisfactory and scientific test" (No. 529) cannot be regarded as that of an expert.

Also Majendie, the chief inspector of explosives, takes up the position that oil of  $73^{\circ}$  F. (Abel) gives off inflammable vapour only at much higher temperatures, although he wishes to express himself about the flash point question under reserve (No. 301). Thus, for instance, when Roscoe asked the question (Nos. 251, 252) whether with a barrel of oil of  $73^{\circ}$  there was any danger at a higher temperature than  $73^{\circ}$ , Majendie answered, "Oil in barrel will not be giving off its vapour at these temperatures." Let Majendie make the trial: the result can, according to the temperature, be like the accident which happened several years ago in Arnheim, Holland, when a petroleum merchant, wishing to see how much oil was still in his barrel, introduced a burning candle. The terrible explosion which followed killed the man on the spot, and the death of the wounded wife followed, while the windows were smashed and the door torn away.

It is astonishing to see how the Inspectors of the London County Council declare again and again before the judge, just like Spencer, that these accidents are caused only by the cheap lamps, and the judges then repeat the complaint against the lamps. That the oil contains from 6 to 8 per cent. naphtha, and that if this naphtha were absent the flash point would rise to  $105^{\circ}$  F. Abel, so that the oil could be used in the very same lamps without danger, has never suggested itself to them. The gentlemen no longer see the oil for the lamps. According to the opinion of the inspectors, on the other hand, no dangerous oil comes to London, which really means no oil under  $73^{\circ}$  F. (Abel).

A few words more about Spencer's safety lamps. The Commission have asked him to make further trials with safety lamps in regard to danger which these lamps might offer if upset, etc. These trials are not fully reported yet, as the Commission did not come to an agreement in the last meeting. Only we know that Spencer has made experiments with lamps of different systems, in a specially-prepared room, in which there is also placed a doll dressed as a lady. The burning lamps were upset, allowed to drop and thrown about; also the lady was bombarded with lamps. Spencer, protected by two firemen, armed with sacks and extinguishing apparatus, has, for example, caused fire with some kinds of safety lamps not less than eight times in one afternoon. Therefore, the lamps which have hitherto been sold as safety lamps must in the future law on lamps be specially examined, and the publication of the London County Council concerning the construction of lamps, signed by Spencer, have

been very incomplete. Evidently Spencer's experiments will lead now to a new scientific method for the testing of lamps. The results of experiments with a number of safety lamps have been published; that is to say, with the kinds recommended and mentioned by Spencer, by an "Oil Trade Expert," and judging from his words, a thorough expert on the whole question, and the result was remarkable. The result was that, on upsetting these burning lamps, all except one, with self-extinguishing apparatus, leaked and took fire; one, which they tried to extinguish, was the cause of a violent explosion. Spencer is quite right, as also Redwood, when he declares before the Commission that one can daily burn in good lamps oil of  $73^{\circ}$  F. (Abel), and that for years. Daily experience teaches it; but that does not prove the safety of the oil: with good care one can also burn naphtha. And I have also personally found out that the lamps sold as safety lamps, filled with this oil, are not safe under all circumstances and do not always remain so. With oil of  $105^{\circ}$  F. (Abel), which does not contain the 6 to 8 per cent. naphtha, all lamps and cooking apparatus are as good as quite safe. Even glass lamps filled with this oil are to be preferred to metal ones, in which the oil is heated much more.

In addition to the opinion of Majendie and Spencer, the Commission had also some evidence from J. Young, who belongs to the Scottish Industry (Oil). His opinion is diametrically opposed to that of Spencer. "I entirely disagree with it" is his answer (No. 637). He points out that the usual oil contains from 5 to 10 per cent. volatile portions, which are the cause of its dangerous character. How the experiments were carried out is not told. My experiments with a good working Column apparatus have shown that for oils of  $68^{\circ}$  to  $73^{\circ}$  F. (Abel), that is to say for the Standard oil, No. 1, which contains the greatest quantity of very volatile and heavy oils mixed (the so-called heating parts), it is a question only of 6 or at most 8 per cent. Young mentions an experiment in which, by distilling off 5 per cent. from oil of  $76^{\circ}$  F., oil of  $98^{\circ}$  F.,  $95.0^{\circ}$  F. was obtained (No. 622). It must be remarked that the results, as I have already mentioned, are greatly influenced by the power of the Column apparatus. Young also points out that the price of the oil of about  $100^{\circ}$  F. (Abel test) needs to be only very little or not at all different from that of the oil of  $73^{\circ}$  F. But his evidence was not brought to an end; the Commission, on account of the closing of Parliament, not being able to bring his examination to a conclusion.

The treating of the present condition of this question in England has come to an end herewith. Johnston has lately expressed the wish in Parliament that the Commission of 1894 may be reconstituted; we can therefore hope that the examination will be taken up again.

But the past, the way and manner in which the legal flash point has been arranged in England, gives occasion for a few remarks. In general, it would be very desirable to see the whole affair of the flash point in England published and explained by an expert. There must exist, so far as I know, a report which was never published from the years before 1870, by Professor Abel, Dr. Attfield, and Dr. Letheby, in which a test of  $100^{\circ}$  F., which was much higher than the latter fixed open tests of the same temperature, is recommended. Then the reasons would also be known which have led to an Abel test of  $105^{\circ}$  F. for the English "War Department," while for the usual use a test of  $73^{\circ}$  F. was considered not dangerous. The trials upon which the assertion rests that the old English test of  $100^{\circ}$  is equivalent to the Abel test of  $73^{\circ}$  could then also be closed considered. We already know that several chemists asserted at that time the difference was only  $15^{\circ}$  F.; others, among them Redwood and Abel, have found it about  $27^{\circ}$ .

(To be continued.)



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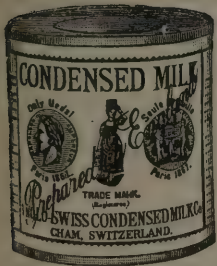


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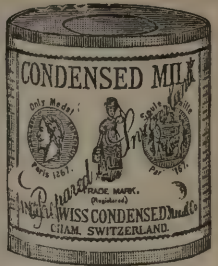
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## Food and Sanitation.

SATURDAY, JULY 25TH, 1896.

### A "SOMERSET HOUSE COW."

THE Skipton magistrates recently gave a decision which we hope will not be repeated, or the practice of making the cow *particeps criminis* in adulteration will be much more general than is the case at present. When milk is bought the purchaser expects to get milk of average quality, and not the product of some miserable animal that should be poleaxed instead of milked. The tolerance shown by magistrates and the encouragement given by Somerset House to accept as satisfactory any milk yielded by a cow is distinctly against the public interest. It causes feeding for quantity regardless of

quality, and the public get an article having about 1 per cent. less cream than it ought to have. Abnormal cows, such as the one in the following case, either ought not to be allowed to exist or the persons selling such milk should be taught the obvious truth that such a substance is not milk that should be permitted to be sold to the public.

Smith Redman, farmer, Farnhill, was summoned under Section 9 of the Food and Drugs Act, 1875, for the adulteration of milk. He was represented by Mr. W. Thompson, solicitor, Skipton.

Inspector A. Randerson explained that on the 4th ult. he went to the defendant's farm at six o'clock in the morning, and followed a milkman named Mason who was going into a shed. Witness saw three cans (two on the sink near the tap and one on the side), and asked for a pint of milk from each. He was served, and then divided the samples into bottles, and gave the defendant half and sent the other to the public analyst. On the samples being returned, he found that two of them were right, but one, which was labelled 193 B, was very much under proof. The certificate of the latter was as follows:—"The sample contained the following parts—Milk fat, 2.23 per cent.; solids, other than fat, 9.02; and water 88.75. From these results I am of opinion that the sample has been deprived of a portion of its natural cream or fat milk. I assume the deficiency to be not less than one quarter of the fat originally present.—A. H. ALLEN, Analyst." On the day the sample was taken there was a greater demand for milk than on any other day.

Mr. Thompson, for the defence, explained that the tin from which the milk had been taken was a small one, and the defendant's son had just put it there, after having finished milking the last cow. This cow had been suspected for a long time, and when the defendant received the summons he had a sample of milk taken from it, in the presence of an independent witness, and sent to Mr. Rimmington, analyst, Bradford. The certificate showed even a worse percentage than the one described. He (Mr. Thompson) now offered to have a sample taken in the presence of the inspector, and sent to the analyst to prove that the cow gave an inferior quality of milk. The milk in the tin was only from one cow, and had not been mixed with the other milk.

The inspector refused to take a sample of the milk as Mr. Thompson had suggested. The tin he took the adulterated milk from contained four gallons, and that would not have all come from one cow.

The defendant, John Redman, and Elizabeth Redman, swore that the milk had not been tampered with, and the former added that the tin which the inspector had taken the milk from did not contain four gallons, but only the quantity he had taken from the last cow.

The magistrates decided to dismiss the case.

Our policy should be to raise the quality of our dairy cattle, and not by decisions like the above to encourage the existence of the degenerate and unfit.

### THE VALUE OF PUBLIC HEALTH WORK.

MONEY laid out on sanitation, like that on education, must be classed as reproductive expenditure, says the *Liverpool Daily Post*. In neither case is the return direct, but it is none the less indisputable and substantial. Fairly precise evidence of the fact is furnished in the report of the Local Government Board for the past year. M. Henri Monod, director-general of the Public Health Department of France, has drawn attention to the saving of life effected in this country by diligent attention to sanitary improvement. Taking the decennial period of 1880 to 1889 inclusive, and calculating the decline in the rate of mortality, we get at the remarkable result that 8/6,581 persons survived who would otherwise have died. It is not possible to be positively accurate in these computations, which rest



so much on hypotheses; but there is no doubt that the death-rate in its variations fairly indicates the fluctuating loss of population. If, then, sanitation has economised life to the extent quoted, in a single decade, a money value must attach to the human energy thus spared to the community. Dr. Farr calculates individuals as inherently worth £159 a head to the general mass, and on this basis the recoupment would figure up to about eight millions sterling. Some statistician with leisure may discover that this estimate is either too low or too high; but for the purpose of the argument it will suffice, as it is to show the material advantages to the commonwealth that accrue from close attention to the public health.

### THE TINNED MEAT TRADE.

PERIODICALLY our *Daily Telegraphs*, etc., have a fit of indignation, and demand why supine sanitary inspectors do so little to prevent the poisoning of the public by rotten meats, etc. The following illustrates the amount of encouragement inspectors get, and we have not seen any particular grumbling in our daily drivellers against Mr. Mead's decision:—

"The hearing of the summonses against Joseph Fells, an eating-house keeper, of 188, Whitechapel-road, charging him with having in his possession a quantity of unsound food, consisting of 1,529 tins of potted tomatoes, apples, apricots, damsons, sugar corn, peas, beans, soup, salmon, lobster, sardines, oysters, haddock, tongues, cherries, herring, greengages, rabbits, asparagus, and beef, was resumed at the Thames Police-court on July 17.—The Rev. J. Atkinson said he had obtained considerable quantities of soup for distribution among the poor, and he had always been perfectly satisfied.—On behalf of the defendant Robert James Webster said he had bought two loads of bad tins for manure, at 30s. a load, from the defendant.—Mr. Mead said the case had caused him a great deal of anxiety. He had no hesitation in coming to the conclusion that the seizure was bad, but the chief question he had to consider was whether those tins were for the food of man.—He should think to use bad food in defendant's shop would not be "worth the candle," for it would carry its own condemnation. The most serious point against defendant was that he sold some tins, concerning which he had given an undertaking to use for manure, for human food; but it was probable that the parties who sold them had a business-like view in not wishing to have damaged tins, bearing their names, sold about the East-end: Defendant had been guilty of a dishonourable act, but he stated, and there was no evidence to the contrary, that these tins were substantially good. Upon a consideration of all the evidence he came to the conclusion that the summonses must be dismissed. The matter was one which called for inquiry."

In place of abusing the inspectors in future might it not be better to compel an occasional magisterial worm to dine off some such meat *pour encourager les autres*?

### MORE AMERICAN OIL MURDERS.

A SHOCKING explosion occurred in Birmingham last week, seriously injuring a woman and her daughter. The woman turned down a lamp which had been alight all night. It burst and the lighted oil fell on the woman and her five-year-old child. The father was also burnt in extinguishing the flames, and the woman and child were removed to the hospital in a state of collapse.—Mr. E. A. Carttar held an inquest on Tuesday, at Bermondsey Town Hall, concerning the deaths of Sarah Millward, aged 7 years, Ada Millward, aged 5

years, Martha Millward, aged 4 years, and Bertie Millward, aged 8 months, who lost their lives at a fire last Friday week at No. 1, Rudyard-place, Kipling-street, Bermondsey. The jury returned a verdict to the effect that the deceased children were burned to death in a fire caused by a defective lamp. They recommended that the dangerous nature of these lamps be more publicly declared, which is just the sort of asininity the American oil villains want. Blame the lamps is their game, not their low flashing oils. How much longer is the infamy and murder, with its shameless "Expert" scientific liar backing, to be tolerated?

### MR. RICHARD BANNISTER ON BEER AND SPIRITS.

SOME interesting evidence regarding the adulteration of spirits and beer was given before a recent sitting of the Royal Commission on the Licensing Laws by Mr. Richard Bannister, chemist at Somerset House laboratory. We extract the following from the official minutes of evidence which have been published:—

Mr. Bannister was questioned by Mr. Samuel Young, M.P.: May I take it that you consider Irish unsweetened spirits, which we call whisky, to be the chief beverage of England, Ireland, and Scotland?—No, not of England or Scotland. Do you mean Irish whisky or Scotch whisky, or both?

Whisky as such?—Then I may say, yes it is.

It is very important, therefore, that it should be unadulterated?—Exactly.

You from time to time analytically test the whiskies in view of discovering the adulteration?—We do.

Do you say very frequently?—Very frequently.

What is your experience in reference to the manufacturing department—I mean the distilling department?—Our experience is that it is carried on in a very scientific and good way.

Did you ever discover any adulteration in distilleries?—No.

What is your experience in reference to the retail trade?—My experience with reference to the retail trade is that the adulterant generally is water.

Have you discovered for many years adulteration in whisky in the retail trade?—I have not. I think you will see from an answer that I gave that we have not found any adulteration in whisky at all. There is not a record in our books.

Why I ask you that question is this: I suppose you are aware that well-meaning men are often victims of popular errors, in regard to the manner in which the trade is carried on?—Exactly, that is so.

Many of them suppose that from the centre to the circumference there is dishonesty?—Just so.

But your experience is not that?—No, my experience is not that.

If any one were to say that whiskies are medicated or adulterated or any compound substance used in substitution you would not agree with them; you would not accept the statement?—I should not, but I should be very anxious in a case of that kind to investigate the matter and to see exactly the reason why the person says that, because I think nine times out of ten you will find that it was due to the quantity the person had taken, and not to the quality of the whisky he had drunk.

In fact, I may take it that it is not possible under Government inspection, which has been in existence 35 years, to carry on the trade in a dishonest manner?—Exactly; in the way of adulteration; no; and not only that, there is the Food and Drugs Act at the present time in operation, and has been since the year 1875. So the public are protected not only by the revenue authorities, but also by the analysts under the Food and Drugs Act.

Apart altogether from Government inspection, is there any inducement to adulterate spirits since the materials from which they are made are much cheaper than the very adulterants?—There is not; but then, of course, the difference that comes in there is on account of the duty. The duty is very high. Some of the spirits themselves are sold at a very low price indeed, but then put on a duty of 10s. 6d. per proof gallon, whether the whisky is good or bad, it follows as a matter of course that the price is comparatively high.

Beyond that there is no inducement?—No inducement beyond that.

On account of the cheapness of grain?—Yes.

You are aware, no doubt, that there are two modes by



which whisky is manufactured—one by patent still, and the other by pot still?—Yes, but you would scarcely call patent still spirit whisky in the condition in which it is distilled.

Is it rectified to the extent of 65?—Exactly.

It all goes off at 65?—It all goes off at 65, and the flavouring material is taken out by the rectification of the still.

And reduced for bonding purposes to 25?—Just so.

May I ask you, do you know how much patent still is made in proportion to pot still?—We can get the return. I daresay this paper will give a comparison. This statement in 1890 is that of the 28 million gallons produced and consumed as a beverage, 16 millions are made in pot stills.

Can you say if there is more fusel oil in pot still than in patent still?—There is a small quantity—a slight increase, but I will tell you exactly the quantity of fusel oil we found in the pot still and in the patent still. In the pot still we found of fusel oil 78 thousandths of 1 per cent. to 122 thousandths of 1 per cent. That is to say, that in a 1,000 gallons you would have from 7-10ths of a gallon to  $1\frac{1}{4}$  gallon of fusel oil. That is in pot still. In the patent still there is practically none.

Because it is run off at 65 over proof, highly rectified?—Highly rectified, but the quantity of fusel oil that we find that is made in a distillery as a bye-product in the manufacture of spirit by a patent still is  $1\frac{1}{4}$  gallons in a thousand gallons of spirit at proof strength. That is taken out of the spirit.

By oil traps?—Exactly; in the apparatus itself.

In the oil traps there is no fusel oil found when the material is good from which the whisky is produced?—There is always fusel oil in the manufacture of spirit. It is produced in the manufacture of spirit either by the patent still or by the pot still, irrespective entirely of the material. The material has nothing to do with the production of fusel oil.

But in the patent still it is filtered, it is eliminated?—It is eliminated in the still, and does not go into the spirit produced by the patent still.

So that really in the patent still there is less than in the pot still?—Certainly, considerably less.

Fusel oil, therefore, is an essential quality in spirits?—It is practically always found in spirits. You cannot manufacture spirit without manufacturing at the same time a quantity of fusel oil. It is a bye-product in the manufacture.

Do you consider that fusel oil is necessary for maturing the spirit?—No, because it does not alter. In experiments made in 1890 and 1891 with new whisky and with old whisky it was found that in the course of about six years over which our experiments extended there was no practical change in the fusel oil that was present in the new spirit and in that kept till the spirit was old.

Do all the chemists agree with you in that?—No, they do not.

Some chemists say it is necessary for the maturing of the article?—They do. There is no doubt it is an old fallacy, and at the same time it is a fallacy; and many people believe that it is the fusel oil that changes and matures the spirit.

I may take it, at all events, that there are differences of opinion on that subject?—Exactly.

Can you give evidence of the physiological effects of fusel oil?—I think you said it does not injure the stomach?—It depends on the quantity taken. We are speaking of the fusel oil that is present in spirit, that we say is very small. Taking fusel oil by itself it is very objectionable, and it interferes, too, with the breathing.

I think one of the experts who gave evidence on the Committee on Bonding some time ago, to which you made reference, said that fusel oil promoted digestion?—I can speak fairly well to the question asked, because I remember the investigation that was carried on and all the details of it, and I believe the witness said this, that if he took a plain spirit—that is to say a rectified spirit—and drank that, that had a bad effect on his stomach; but when he took whisky containing fusel oil, then it had not that bad effect.

Does not alcohol, which we know to be secured from saccharine solution, obtain in every product of the vegetable kingdom?—No, it does not.

Can you not get alcohol out of almost every vegetable?—Oh, yes, anything that contains starch or sugar. If you like to produce it you can, but you do not find it in nature.

You do not find it throughout the products of the vegetable kingdom?—No, you do not, but if you have got any product of the vegetable kingdom containing sugar or starch it is a very easy matter to get alcohol from that particular vegetable.

You do in the majority of vegetable productions?—

Which? If you will kindly name them I will try to answer your question.

You get it in wheat and barley and oats and rye; and you get it in even the ordinary vegetables which we use?—But alcohol is not in barley, rye, and oats *per se*; it is produced in a certain way from barley, rye, and oats. There is the starchy matter and a small quantity of sugar that you get in these cereals, and then the distiller or brewer knows exactly what to do to get the maximum of alcohol; but as far as wheat, barley, and oats are concerned they contain no alcohol.

Those who object to the use of alcohol consume the alcohol in another form?—They are consuming the material that would make alcohol.

Do you know is there much molasses spirit produced?—Yes, there is one distiller in London who makes a considerable quantity of molasses spirit, but that is used for methylation.

Do you know of molasses spirit being produced at any other place?—Molasses spirit has been produced at other places at other times, but at the present time the only distillery I know is one in London, where they are making molasses spirit.

Are not there distilleries using rice?—Yes.

Do you know, as a matter of fact, that they do not use these things in Ireland?—As a matter of fact, I find from the official records that during the last ten years neither molasses nor rice has been so used in Ireland.

Patent still distillers use what?—They use different kinds of cheap material for making patent spirit.

Neither molasses nor rice?—Well, they use Indian corn.

But in Ireland neither molasses nor rice are used for the production of whisky?—But molasses and rice when cheap are generally used in this way. It all depends on the cheapness of the material, because the patent still takes out all the impurity, and you are aware that the distillers have to study the price of raw material that they have to use for making their spirit.

Have you for the last ten years found any in Ireland?—I have not been in any Irish distillery for the last ten years, except some of the pot distilleries.

You may take it from me that there have not been for the last twenty years.—Before the Food and Drugs Act of 1879 were spirits allowed to be sold by retailers at any strength?—Yes, as far as the Act of 1875 was concerned, at any strength, but then the question came in as to the prejudice of the purchaser, and many magistrates decided different ways as to what was to the prejudice of the purchaser; therefore it was essentially necessary to have some legal definition of prejudice to the purchaser, and the Act of 1879 was passed for that purpose.

By Mr. Younger: With regard to the few questions asked you just now about fusel oil, I think there is one point not clearly brought out. You have, I think, told the Commission that fusel oil is a bye-product, not a principal product, in distillation?—It is a bye-product in the manufacture of spirit.

Will you be good enough to refer to question 2,060, in your evidence last week? Dean Dickinson there asked you "Is fusel oil used more in Irish than in English distilleries?" That would assume that fusel oil is used in the manufacture of whisky? That is not the fact, is it?—It is not the fact, because the fusel oil is produced in the distillery, and the misfortune is, they do not know what to do with it when they have got it.

Is it not the object of every distiller to reduce the fusel oil in his spirit as far as possible?—Exactly. I say here, "Fusel oil is chiefly used for the purpose of getting out the alkaloids from quinine"; and it is also used for making the acetate of amyl that is used for flavouring the pear-drops that children eat.

So that probably in eating half a pound of pear-drops you would take more fusel oil than in drinking a good lot of Scotch whisky?—I think there is no doubt about that.

THE New Commission of Tuberculosis is constituted as follows: Sir Herbert Maxwell (chairman), Prof. Browne, Dr. Thorne Thorne, Dr. Shirley Murphy, Mr. H. E. Clare, Mr. T. C. Trench, and Mr. John Speir. We do not notice the name of Mr. Field, M.P., on the Commission. Surely a principal victim—the butcher—has a right to be represented on the Commission by some one who understands his grievances.



## ANOTHER CURIOSITY IN SCOTCH SHERIFFS.

THE following case is a touching illustration of another Sheriff's fitness for a full front seat in our museum of Scottish legal monstrosities. It requires no comment, and needs no elucidation. It merely confronts us with a problem—from what kind of dunder-headed drivelling imbeciles Scotch Sheriffs are selected. It is about time there was a new Act and a standard for milk, at least, for some magistrates appear willing to even allow plain water, if any cow were disgraceful enough to yield such through the udder, to pass for milk.

## IMPORTANT INVESTIGATION.

A case which has excited much interest in agricultural and scientific circles came before Sheriff Campbell Smith, in Dundee Sheriff Court, on July 16. The prosecution was that in which Jane Keenan or Connelly was charged with selling milk adulterated with water, the allegation being that on May 27, within her shop at 76, Scouringburn, by the hands of a servant, she sold to George Beveridge, Sanitary Inspector, twopence worth of milk as sweet milk, but which was not of the nature, substance, and quality of the article demanded by him, it being adulterated with water to an extent not under 11 per cent, contrary to the 6th section of The Sale of Food and Drugs Act, 1875, as amended by section 2 of the Sale of Food and Drugs Act Amendment Act, 1879. She pleaded not guilty, and was defended by Mr. Andrew Buchanan, solicitor, the prosecution being conducted by Mr. Alexander Agnew, the Procurator-Fiscal.

## THE PURCHASE OF THE MILK.

George Beveridge stated that the accused was duly registered as a purveyor of milk, in the terms of the Act. At 9.30 a.m., on Wednesday, 27th May, accompanied by William Mackay, sanitary officer, he called at the shop of the accused, and found Peter Muirfoot in charge. He asked for 3d. worth of sweet milk, and handed to Muirfoot a tin jug capable of holding seven gills. Muirfoot filled it from a large measure capable of containing 20 pints, but said that the tin would not hold the quantity asked. Muirfoot then put the milk back into the large measure, and put 2d. worth into witness's tin. Witness informed the shopman of the purpose for which the milk was wanted—namely, an official analysis. Muirfoot replied that he was aware of it. He informed witness that he got milk from Charles Finlay, dairyman, Pitempton, Downfield; David Moncur, farmer and dairyman, Denhead of Monikie; and also from the Carse of Gowrie Dairy Company. He divided the milk into three portions in the presence of Muirfoot, and put these up in three bottles, which he sealed. One of them was left in the shop, another was retained by the witness, and the third was given to the Public Analyst. On 29th April he purchased a sample of the milk supplied by Mr. Moncur in the shop of Ann Bruce, 50, Arbroath-road, and of Finlay's milk in the shop of Mr. Connelly on the following morning. On the morning of the 7th July, acting on the instructions of the Fiscal, he took samples of Finlay's and Moncur's milk at the shop of the accused. Mr. Finlay had 9 cows and Mr. Moncur 25; he could not enumerate the 100 sources from which the Carse of Gowrie Company derived its supply. (Laughter.)

William Mackay, sanitary officer, corroborated.

John Greig Annan, assistant to Mr. Macdougald, public analyst, Dundee, stated that on May 27 he received from Beveridge, a sample bottle of milk, which he handed over to Mr. Macdougald for analysis.

## CITY ANALYSTS' EVIDENCE.

George D. Macdougald, City Analyst, Dundee, said he had held that post for over 20 years. He had had extensive experience in the analysis of milk. During the present year he would certainly have analysed no fewer than 2,500 milks. He received the sample from Mr. Annan, and he made two analyses of it, while his assistant made a third. The results agreed to within a few hundredths per cent. The conclusion at which he arrived was that the sample contained 11.77 per cent. of added water beyond the natural water in the milk. The amount of non-fatty solids he found to be 7.5 per cent. The lowest normal amount of non-fatty solids in milk that had not been tampered with was 8.5 per cent. This was the standard adopted by the Society of Public Analysts in this country. He had before him the result of more than 120,000 samples, showing the fluctuation of non-fatty solids. The limits of variation were very small indeed. The non-fatty solids were the most stationary of all the solids in milk. The fat fluctuated very much according to feeding, housing, and

other accidental circumstances. He detected the presence of water by a reduction of the non-fatty solids below the normal. The variation in non-fatty solids was from 8.7 to 8.9. The greater the number of sources from which the milk was drawn the smaller was the chance of exceptionally low percentages. He was perfectly certain that a dairy sample of even a few cows could not produce a milk of the composition of the sample in question. The percentage of fat in this sample was specially low, amounting to 2.37 per cent., and this rather corroborated the fact of water having been added, because it was a most unusual composition. If the 7.5 per cent. of non fatty solids had been due to abnormal conditions, the fat would certainly have been very much lower. If there had been exceptional feeding, which would have interfered with the character of the milk, it would first have touched the fat. If a herd of cows was underfed the first result was that the fat went down. On May 7 he analysed the samples received from the authorities on April 29 and 30.

## AN OBJECTION.

Mr. Buchanan objected to this evidence.

Mr. Agnew contended that it had a practical bearing upon the case. He was charging the accused with having sold milk which was adulterated with a certain amount of water. It so happened that they had taken, during the previous month, samples of milk from the very same supply from which she said she got the milk in question. These samples had been analysed and tested, and clearly showed the character of the milk she had been receiving. On July 7 samples from the same source were again analysed, and with the same result. He had thus tested the milk both before and after May 27, and on each of the two occasions had found she was receiving pure milk. The only exceptional milk was got out of her shop after she had had it a certain length of time in her possession.

The Sheriff said he could only accept the evidence as part of the general view of the witness that samples of this kind were either impossible altogether, or were very rare.

Mr. Agnew said it went a great deal further, because it showed that the sources of the milk supply were right, and that it was only after it had been in the possession of the accused that it went wrong.

The Sheriff (to witness): If the cow was fed on hay would there be as much water in the milk as if it was fed on grass?

Witness replied that when a cow went on grass there was not the slightest doubt that the quality of the milk changed. It was much thinner. But when they came to examine the milk in the laboratory, the extraordinary thing was that the thinness of the milk was due to the diminution of the fat. The fat went down whenever the cow was put on the grass, but all the rest of the solids, cheese and sugar, remained practically at the same figure, so that they might feed the cow in any way they pleased, and they would not reduce the non-fatty solids down to a figure like 7.5.

The Sheriff said, in his opinion, the evidence with reference to the examinations of April and July samples was useless; but as it was of public interest that this inquiry should have full publicity, he would admit the evidence, giving the Procurator-Fiscal to understand that what he required to prove was not that in other dairies better milk was got, but that it was impossible that the milk in question could have been produced from cows in any dairy without water having been put into it.

## THE APRIL SAMPLES.

Witness (resuming) gave the result of his analysis of the April samples. In one of them the percentage of non-fatty solids was 8.76, and of fat, 2.88, while in the other the percentage of non-fatty solids was 9, and of fatty solids, 2.80. In the July samples non-fatty solids were 8.3 and 9.02 per cent. respectively, and fatty solids, 2.88 and 4.53 respectively. The average of non-fatty solids in all four samples was 8.77.

Cross-examined—Milk became unreliable for analytical purposes in an interval of about ten days. He never found a sample of pure milk in which the non-fatty solids were so low as 7.5 per cent. They never went below 8.5. The Somerset House standard was 8.5 for non-fatty solids and 2.75 per cent. of fat.

Dr. Aitken, Professor of Chemistry in the Royal Veterinary College, Edinburgh, stated that according to the analysis of Mr. Macdougald there were very evident signs of the milk tested by him having been adulterated by water. It was of the nature and substance, but not of the quality of sweet milk. Assuming the analysis to be correct, he regarded the milk as having been adulterated with at least 10 per cent of water. His opinion was based upon well ascertained facts as to the composition of pure milk. There was an enormous body of evidence now furnished which enabled scientists to say what that composition was.



Much valuable information on the subject had been contributed by Dr. Vieth, analyst to the Aylesbury Dairy Company. That company supplied an immense quantity of milk to the City of London, and they were a milk receiving company as well. They employed an eminent specialist, who was continually engaged analysing the various supplies of milk sent in from the surrounding districts, and the gentleman to whom he had referred—Dr. Vieth—had prepared interesting statistics bearing on the question. In 11 years he had tested upwards of 120,000 samples of milk, and the average composition of these samples was as follows:—Total solids, 12·9; fat, 4·1; solids, not fat, 8·8. Taking all these samples analysed by the Aylesbury Dairy Company, they found that in no instance did the total solids supplied in a quantity of milk to the company fall below 11·5. In answer to Mr. Buchanan, witness admitted that it was impossible to distinguish between natural water taken from the milk and water put into the milk. He considered it impossible for milk unadulterated to yield only 3·0 of fat and 7·1 of solids, not fat.

#### THE MILK ADULTERATED.

John Clark, one of the public analysts for the City of Glasgow, and analyst for the counties of Lanark and Renfrew, was the next witness. He had gone over Mr. Macdougald's analysis, and he thought there could be no doubt that the milk in question was adulterated by the addition of water. In his own experience he had occasion to examine hundreds of samples of milk supplied to dairies in Glasgow, and in no instance could he remember of the total quantity of non-fatty solids falling below 8·4. This closed the case for the prosecution.

#### THE DEFENCE.

Peter Muirfoot was the first witness called for the defence. He said when Beveridge got the milk Mackay took it from him and went into the back shop. He did not know what Mackay did in the back shop. He had not put any water in the milk, and it was not possible for any other person to have done so.

Cross-examined: He did not pour out the milk out of Beveridge's tin after he filled it up the first time. He did not see Beveridge divide the milk into three portions.

James Connelly, the husband of accused, said when he entered the shop Beveridge was writing out labels and Mackay was in the back shop.

David Moncur, farmer, Denhead, Monikie, said his vanman carried the milk from the byre and filled up the flasks. It was quite possible that he would put only one cow's milk into Connelly's flask.

Cross-examined: The persons who were milking the cows emptied the milk into larger cans. The vanman sometimes came along and got a drop from this one and that one to make up what he wanted, but sometimes he did not require to do that. The milk was put through the sieve by the vanman.

By the Sheriff: There was no possibility of the milk being watered on May 27.

John Craig, vanman, said the milk was not mixed when he went to the byre for it. He took what was ready—perhaps one cow's milk or two or three. It was quite possible that he would lift one cow's milk at a time.

Charles Findlay, Pittempton, Downfield, said he brought his milk to Connelly's in a separate can from the others. He poured the milk himself into Connelly's receiver, in which there was about 1½ pint previous to his doing so.

Cross-examined: The samples taken from his cows on June 29 and 30 were the first milk. He was in the habit of giving Connelly only one cow's milk. He got five pints, and if the cow did not give that he had to make up the required quantity from another cow's milk.

David Rodger, manager, Carse of Gowrie Dairy Company, said the strength of the milk depended greatly upon the feeding.

#### MORE EXPERTS.

John Falconer King, City Analyst for Edinburgh, said if the sample of milk which Mr. Macdougald analysed was got from a herd of cows in a fairly healthy condition he was perfectly correct in reporting that it had been adulterated; but it was perfectly possible, if it came from a single cow, that it did not contain any added water. There were many cases on record of milk from a single cow having yielded solids not fat very considerably under the standard mentioned.

Cross-examined: If milk had been got from a herd of cows in a fairly healthy condition they said that anything

below 3 per cent. of fat and 8·5 of non-fatty solids was below their standard.

The Fiscal: Have you ever in your experience seen a milk in which the proportion of non-fatty solids was at all similar in contrast to the fatty solids?

Witness: I have analysed a great many milks, but just now I am not prepared to answer the question yes or no.

William Inison Macadam, Public Analyst, Edinburgh, asked if Dr. King's analysis of the milk taken from Connelly's shop on 27th May was conclusive to his mind that water had been added to the milk, said it was a sample taken from a single cow he would say "No." If it were taken from a herd, where the milk had been carefully mixed, there would be grave doubts.

Mr. Buchanan: If it were taken from two cows, is it possible that such a result could be attained?

Witness: Yes. There have been cases where such a low analysis had been got from one or two cows where the milk had come from the cow direct. I have heard of a low analysis of milk taken from a herd of cows where the milk was pure.

Cross-examined: He had had 30 years' experience, and he had never personally come across a sample with so low non-fatty solids as 7·5.

This concluded the evidence, and the Fiscal and Mr. Buchanan addressed the Court.

#### NOT PROVEN.

The Sheriff, after pointing out that there was no proof as to the actual putting-in of water, remarked that the evidence of all the scientific witnesses came to this, that if the milk had come from a number of cows the probability, coming pretty close to a certainty, would be that it could not have been so destitute of non-fatty solids as to have only 7·5 per cent. He believed that was sound and credible scientific evidence, and as he believed that, he could not doubt that that was a suspicious case justifying inquiry. But the question was whether, even although he was satisfied that it was most unlikely that this milk was destitute of non-fatty solids, as 7·5 per cent. could have come from any dairy or from any number of cows—whether that made it clear that it was impossible that that milk did not come from cows, or a cow, or two cows. The result he had arrived at was that it was quite within the range of possibility that the milk came from a cow or cows, and that there was no water put into it. There were two ways of accounting for it. Suppose that Finlay's cows supplied the milk—say a peculiar cow that gave very watery milk, that would account for a half of it. Suppose that it partly came from that cow or partly from some other cow, and that it was not the full drainings of the cow's udder that were given, but partly taken from one or two cows. Suppose that in Moncur's case two or three pints of the first milk drawn by accident was collected by the men and put into vessels, they would get the thinnest possible of the milk in that way—milk which was quite genuine, although it was by no means normal. Whenever they combined these two things they got quite sufficient to do away with the scientific evidence to the fact that it was impossible that milk could have been genuine milk drawn from the cow. It must have been mixed milk—first drawings, or it might have come from one, two, or three peculiar cows. Although it might be very unlikely, even to the extent, according to an eloquent precedent, of 10,000 to one, it was quite enough to compel him to say the case was not proved. One other thing he had to say was that he did not think that even if he had been satisfied that the milk was so thin as never to have come from any cow without considerable assistance from the iron cow—(laughter)—had he been compelled to come to that conclusion, he did not think he would have convicted this married woman, who had not been in the shop for two months. He had the gravest doubt that her name being on the register made her responsible for what was done in the shop by her husband's servant.

#### BRIGHTON TRADESMEN HAVE AN EASY TIME.

THE Public Analyst (Mr. E. H. Moore) would appear to have had an exceptionally light time of it under the Sale of Food and Drugs Act during the quarter ended the 25th of June last. In the usual return he has furnished of articles analysed by him under the Act during that period it is stated that the total number of samples was only six. These were all of milk submitted by an officer of the local authority, and they were, moreover, all found to be genuine.



## MR. E. BEVAN SUGGESTS AMENDMENTS TO THE FOOD AND DRUGS ACTS.

MR. E. J. BEVAN, the Middlesex analyst, at the recent annual meeting of the Inspectors of Weights and Measures, spoke on the Food and Drugs Acts. The daily milk bill of London, he said, amounted to no less than £25,000. Assuming that the consumption was strictly proportional to population, the daily milk bill of the United Kingdom and Ireland amounted to £223,500, or £81,577,500 a year. It was difficult to say exactly to what average extent milk was adulterated, but he thought they would not be far wrong in saying 10 per cent. Take these figures, a simple calculation showed that the loss to the community, due to the adulteration of milk alone, amounted to £938,141 sterling per annum. Passing on to the amendment of the Act, the lecturer proposed the following alterations.

Section 2.—This section should be amended so as to include all articles intended to enter into, or be used in the preparation of human food, and all condiments and flavouring matters.

Section 3.—In the existing Act the provisions of the section seemed to him to be satisfactory so far as they went. Comparatively little use was made of it, owing to the great difficulty of convincing magistrates what substances, and in what proportion, were injurious to health. The use of copper for preserving the colour of peas and other vegetables, and boracic acid for the preservation of milk, were prohibited in some countries. In some of the largest milk supply companies in the metropolis they entirely forbade it, and it was to be hoped that in any future legislation the use of the drug, if not entirely prohibited, would be kept under proper control.

Section 5.—The provision that a vendor should not be convicted who could show that he was ignorant of the noxious nature of the food he supplied was, he thought, a perfectly fair and proper one, and was entirely consonant with English ideas of justice. Notwithstanding this, he thought a clause might, with advantage, be inserted which would render a vendor liable to conviction for repeated offences under the third and fourth sections, and that ignorance of the composition of the article should not in such case be a valid defence.

Section 6.—This important section required amplification in one or two particulars. It was desirable that subsection 1 should, if possible, be more precise as to what matter or ingredient is required for the production or preparation thereof as an article of commerce in a state fit for carriage or consumption, and not fraudulently to increase the bulk, weight, or measure of the food or drugs, or conceal the inferior quality thereof. As to what is or is not "required for the production or preparation thereof, as an article of commerce," opinions would continue as heretofore to differ between the vendor on the one hand and the public analyst and the prosecution on the other. The question of whether or not colouring matters should be allowed to be added to articles of food was also a debatable one. It would be advisable to prohibit colouring matter in milk altogether. With regard to drugs, it was of the highest importance that the British Pharmacopœia, reference to which was deliberately left out of the Act of 1875, should be regarded as the legalised standard to which all medicinal preparations should be made to conform. It was also desirable that in any future legislation it should be clearly laid down that not only did deficiency in any of the constituents of a drug constitute an offence, but that the presence, in excess, of any substance should be placed on the same footing.

Section 7.—It was sometimes urged in defence proceedings taken under this section that the alteration in composition was the result of accidental deterioration. A clause might with advantage be inserted to the effect that such a defence should not be valid. It was obviously the duty of those engaged in the sale of drugs to see that their standard of strength was maintained.

Section 10.—It was of the greatest importance that the appointment of analysts under this section should not only be made compulsory, but that the Local Government Board should be entrusted with such authority as would enable it to insist on the proper carrying out of the Food and Drugs Act. It should be the duty of all county councils and local authorities to see that a reasonable number of samples were taken in proportion to the population. It would be a useful provision in any future Act if the Local Government Board were empowered, in the case of any authority failing to put the Acts into force, to undertake the collection of samples and the prosecution of cases, charging the authority with the expenses entailed.

Section 18.—There were at least as many opinions as to what form a certificate should take as there were magistrates and benches of magistrates. For many reasons he thought it was better, especially as the public analyst could, if desired, be called by the defendant, for him to say as little as necessary on his certificate. Still, if the courts insisted on fuller information, then all that he should be called upon to do was to give the datum on which he formed his conclusions.

Section 21 dealt with the analyst's certificate. He thought the analyst should be adequately remunerated for such cases as were decided against the defendant, and that, as it was impossible for the public analyst to be present at the hearing of every summons, no certificate of another analyst should be received in evidence unless such analyst was prepared in like manner to submit himself to cross-examination, in which case an adjournment should be made, in order, if so desired, that the prosecution should have the advantage of the assistance of the public analyst.

Section 22.—In dealing with this section, he spoke at some length on the necessity for a Board of Reference, which should have the power to determine standards of limits of purity for all kinds of foods and drugs, and, if necessary, of instituting the investigation of new methods of analysis, and should keep itself in touch with the other authorities of other countries, so as to obtain speedy information of any new adulteration. Such a board should consist of the Chief Chemical Officer of the Inland Revenue Laboratory, a member nominated by the General Medical Council, three public analysts nominated by the Local Government Board, and one person nominated by the Board of Agriculture.

The lecturer dealt with only one other amendment, that was with reference to minimum punishment. In cases of repeated offences he would, without any hesitation whatever, suggest that imprisonment be substituted for fine.

### MILK.

At Slough Petty-sessions, Edward Henry Renn, dairyman, Slough, was summoned for adulteration of milk, on June 12.—Defendant pleaded not guilty.—Superintendent Sutton, inspector under the Food and Drugs Act in the Southern Division of the county, said he saw defendant's wife delivering milk from cans at Upton on the day in question. Witness sent Police-constable Gill to get some of the milk. He met him with a pint of it, and he told Mrs. Renn that the milk had been purchased for the purpose of analysis. She said it was skim milk, and saw witness divide it into three portions, one of which he sealed up, one he gave to Mrs. Renn, and the third he forwarded to the County Analyst. Soon after he arrived at the police-station Mrs. Renn came and said she had had an accident and had broken the bottle. Witness told her that was a bad job. He produced the Analyst's certificate.—Police-sergeant Crook said that he conveyed the portion of the milk mentioned to the County Analyst at the Museum, Oxford.—Mr. Fisher, county analyst, stated on his certificate that the milk contained 53.0 per cent. of milk, and of added water 47.0 per cent.—Defendant said he was ill at the time, and his wife bought the milk for skim milk, and it was in the same state as she bought it in the Windsor-road. He had been in business at Slough for two years, and was formerly at Windsor. Altogether, he had been in the milk business 17 years, and had never sold "milk and water" before.—Superintendent Sutton said he took six samples on the day in question, and this was the only one adulterated.—The Bench said the defendant's excuse was a lame one, and they inflicted a fine of £1 and £1 7s. 6d. costs.—Defendant said he had no money, and he supposed he must go to prison.—The Bench said in default a warrant of distress would be issued, and if he had no goods he must go to prison for 10 days.

At North London, on July 18, William H. Burdon, of Allen-road, was summoned for selling as milk an article adulterated with 16 per cent. of water. Mr. H. T. Tiddeman appeared for the Hackney Vestry, and Mr. C. V. Young defended. The latter said his client had sent a portion of the sample to Somerset House, and they had declared the sample could not be analysed because of its altered condition—probably (said Mr. Young)—through the improper corking and sealing of the bottle by the inspector.—Mr. Tiddeman objected; and Mr. Young, amidst Mr. Tiddeman's further objections, said that when he defended a similar case at this Court, the Vestry analyst said there was 11 per cent. of added water, and the Somerset House people said the milk was unusually pure. (Laughter.) Mr. Tiddeman again objected, and Mr. Young said that Mr. Tiddeman's



besetting sin was interrupting. (Laughter.) Mr. Tiddeman—And Mr. Young's besetting sin is stating what is not true. (Laughter.) Mr. Young—You say that before you have heard half of what I have to say. (Laughter.) The case was adjourned to enable Mr. Young to call another analyst to prove a certificate which gave a different version to that of the Vestry.

### DISEASED MEAT.

At Stratford, Seth Bull, a pig-keeper, of Manor Park, was summoned for having in his possession pigs suffering from swine fever, and neglecting to notify the existence of the disease to the authorities.—The proceedings were instituted by Mr. Allen, an inspector in the service of the Essex County Council, under the Contagious Diseases (Animals) Act. Last month the defendant sent the carcasses and plucks of some pigs to a Mr. Palmer, of Charterhouse-street, Holborn. These were examined by Mr. Billings, a sanitary inspector to the Holborn District Board of Works. The meat was found to be infected with swine fever, and in due course Mr. Bull was brought up at the Clerkenwell Police-court, and was fined £20 for sending the meat to be sold as food. A report of this case attracted the attention of Inspector Allen, who, having made enquiries, took out this summons.—The defendant, who pleaded that he was not aware of the nature of the complaint, was fined £10 and costs.

At Bootle, on July 17, before Messrs. G. Y. Tickle and J. Neep, John Curphey was summoned for exposing for sale a quantity of unsound meat. Inspector Daley stated that on Sunday morning last, about half-past ten, he visited the defendant's premises, 279, Derby-road. In the shop he found a quantity of meat, part of which was in pickle, weighing altogether about 60lbs., and which was unsound. The shutters of the shop were up, but business was being carried on at the time. He seized the meat, and obtained a magistrate's order to have it destroyed. Witness visited all the other butchers' shops open on that morning, but the defendant was the only one who had bad meat exposed for sale.—The defendant said that the meat was sound when it was first put into pickle, but the warm weather had caused it to go bad.—A penalty of 40s. and costs was imposed. The defendant asked for time to pay the fine, saying that he had only been in business a short time, and that in consequence of the warm weather he had been losing 30s. a week.

### GINGER.

At Manchester, on July 15, Tom Parker, grocer and provision dealer, 124, Greymare-lane, Bradford, was charged with selling ground ginger not of the substance, nature, and quality demanded by the purchaser.—Mr. Rook, superintendent of the Health Department, prosecuted, and Mr. Samuel Pope, barrister (instructed by Messrs. Lee, Scott, and Gibbons), appeared for the defence.—Inspector Houliston said he visited the defendant's shop on June 15 and purchased half a-pound of ground ginger, for which he paid 6d. On the canister from which the substance was taken, were the words, "Genuine ground ginger; guaranteed pure."—Mr. Pope: Is not the district where the defendant's shop is situated a working-class one?—Witness: It is a good working-class neighbourhood.—Did the defendant tell you at the time of the purchase that he had sold it as he had bought it? He did not say that.—Mr. Estcourt testified that the sample in question contained 15 per cent. of mineral matter.—Mr. Pope: What is a fair proportion of mineral matter in ginger?—Mr. Estcourt: About 5 per cent.—Mr. Pope: As the ginger root is not a smooth one, is it not possible for a large quantity of earthy substance to get attached? You know a ginger root is not like a radish.—Mr. Estcourt: I don't think there should be any earthy substance in a commercial ginger.—Counsel was interrogating witness with regard to the production and manufacture of ginger, when the chairman remarked that he thought such questions were irrelevant, Mr. Estcourt only being an analyst.—The defendant said he was only in a small way of business. He had only sold about 5lbs. of ground ginger during the past twelve months.—Mr. Rook: Have you got a warranty with it?—Witness: It states on the invoice from Done Bros. that it is ground ginger.—Mr. Rook: That may be, but that is no warranty.—Mr. Pope pointed out that there was a clause in the Food and Drugs Act, which was framed to allow for such cases as the defendant's, where foreign ingredients were present. He had no doubt but what the

defendant was a *bona-fide* party, inasmuch as he gave the inspector all the assistance he could. There could not be, he considered, any fraudulent intent on the part of the defendant.—The summons was dismissed.

### LINSEED MEAL.

At Dublin, on July 17, Mr. Swift delivered judgment in the case in which Samuel Curham, chemist, South Richmond-street, was charged by Timothy Lyons, Inspector of Foods and Drugs, with selling a half-pound of linseed meal which was adulterated with 10 per cent. of farinaceous matter, and only contained a fourth of the oily matter which it should have contained, according to the British Pharmacopœia. Mr. Swift held that the linseed meal sold by the defendant was a "drug" within the meaning of the Adulteration of Food Act, and he held that the charge of adulteration had been proved. There was no doubt that the defendant sold the meal in the same condition as he got it, for he was too respectable a man to have adulterated it himself, but that was no legal defence. It was a case for a comparatively nominal fine, and he would put on the defendant a fine of 10s.

### CARDIFF AND ADULTERATION.

On July 14th, Stipendiary Lewis heard, in the Cardiff Police-court, several charges of adulteration which had been brought before him at the instance of Mr. Andrew, deputy town clerk, the defendants being grocers and milk dealers in the town. After evidence had been given by Inspector David, the Stipendiary imposed the following penalties:—Mr. Henry Stanmore, milk dealer, 35, Theodora-street, 40s. and costs or one month, for selling adulterated milk; Mr. Edward Harris, grocer, 68, Shakespeare-street, 5s. and costs or seven days, for selling acetic acid for vinegar; Mrs. Nellie Davies, 23, Stuart-street, Docks, 5s., or seven days, for supplying wood vinegar instead of malt vinegar; Mrs. Joyce Roberts, 71, Shakespeare-street, and Mrs. Amelia Higgs, 56, Frederick street, each 5s. and costs or seven days, for having sold acetic acid as good malt vinegar. In each case the defendants pleaded that they had purchased the goods in the belief that they were genuine.

### BUTTER AND MUSTARD PROSECUTIONS IN MANCHESTER.

At Manchester Court, on July 15, Rose Gaffney, 16, Silver-street, Hulme, for selling butter composed of foreign fat flavoured only with butter fat, was fined 20s. and costs; and Thomas Howard, 82, Church-street, Bradford, 15s. and costs for selling mustard containing 15 per cent. of foreign vegetable matter, probably wheaten starch.

### BUTTER.

At Basingstoke, on July 14, Joseph Baker, grocer, was charged with selling margarine as butter. The evidence showed that defendant sold as salt butter what was found to be simply margarine. Mr. Wills Chandler appeared for the defendant. The Bench convicted defendant, and he was fined 35s., including costs.

### POETRY AND ADULTERATION.

THE following lines were picked up on Wednesday night in the vicinity of the Camberwell Vestry Hall. They are said to be the composition of a vestryman. Whoever he may be it is evident that he holds strong views with respect to adulteration and those who dabble in and profit by it:—

Lives of tradesmen all remind us  
 "We can make our pile in time,"  
 And, departing, leave behind us  
 "Sugar mixed with sand so fine"—  
 "Copper'd peas," that perhaps another,  
 Sailing o'er life's hungry main,  
 Buys and eats. Alas! poor brother,  
 He will never eat again.  
 Let us then "be up and doing,"  
 All and sundry, soon and late;  
 Every mean device pursuing,  
 Learn to cheat, and give short weight.



## THE SANITARY INSPECTORS' ASSOCIATION.

THE following are the arrangements, subject to revision, of the Sanitary Inspectors' Association's autumn provincial meeting at Leeds:—

August 20.—Reception by the Mayor, the Right Hon. W. L. Jackson, M.P.; Extraordinary General Meeting; Council Meeting; Smoking Concert.

August 21.—Public Conference at Town Hall, Sir Benjamin Ward Richardson, President of the Association, in the chair; Presidential Address; Papers by Dr. J. Spottiswoode Cameron, Leeds, Mr. J. Lindley, Borough Sanitary Inspector, Batley ("Why Dwelling Houses are Sometimes Unhealthy"); Mr. W. Holmes, County Sanitary Inspector, Wakefield ("Sanitary Administration in the West Riding of Yorkshire"), and R. W. Cass, Sanitary Inspector, Pudsey ("Drainage of Buildings"); Tea, provided by the Mayor; Public Meeting, to which working men and their wives are specially invited; Addresses by Dr. T. Pridgen Teale, Canon Ivens, Mr. W. West (Walthamstow), and others.

August 22.—Visit to Refuse Destructors; Yorkshire College, J. Fowler & Co.'s Works; Horsfall Refuse Furnace Company; Farnley Iron Company; the Leeds Fireclay Company (who will provide luncheon); and the new Sewage Works at Huddersfield; Dinner.

August 23.—Church Parade; Sermon by Rev. Edgar C. S. Gibson, Vicar of St. Peter's Parish Church.

Mr. Edward Tidman, 34, Victoria-street, Westminster, is the honorary secretary; and Mr. T. Swallow, Municipal Buildings, Leeds, the local secretary.

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 347.)

But what must be treated here more closely is the standpoint of Redwood, as this chemist is rightly considered to this day a great authority. That the trade on the whole has had a powerful influence upon the fixing of the legal flash point is evident from the circumstance that, of the eighteen witnesses who made declarations in the year 1883 before the Commission from the "House of Lords," no fewer than thirteen were interested in the petroleum trade. In 1872, their number at a similar examination was one-third. Several merchants asserted at that time that a flash point (Abel) of 88° F. would make petroleum importation impossible. Even to-day we find such assertions in official declarations. But to come to Redwood's standpoint. He answers first to a question about the influence of the introduction of a flash point of 85° F., something evident, "such petroleum as now comes to this country clearly could not be imported"; then he continues, "the ordinary petroleum would be entirely shut out." Everything depends upon the meaning of the expression "ordinary petroleum." Why did he not clear up the matter? If he did not know that this difference in the test of about 12° F. is caused by, at most, 2 per cent. naphtha, where is then his authority? But if he knew it why did he not say it? We must presume that in this question he is of the same opinion as the merchants themselves. That is evident from the following more or less cynical expression which was made by him at the time of the before-mentioned enquiry of 1872, No. 544. "The Board of Trade consider simply and solely the safety of the public without endeavouring to hit any mean between such safety and the convenience or even possibilities of trade." It is odd to demand here a mean between the safety of the consumer and the "possibilities of trade," if with the latter there is a question of only about 2 per cent. naphtha, or even by a rise to 105° (Abel), of at most 7 per cent. And if he did not know at that time, and if he did not know in 1890, that it was a question of such small amounts, then I repeat the question, where is his authority in regard to the flash point?

It is necessary that Majendie, who has declared himself to be able to express himself only with reserve about this question, should ask for information from quite different gentlemen than Spencer and Redwood.

And now we can consider more closely the equally instructive history of the origin of the legal flash point.

## HOW THE MINIMUM FLASH POINT OF 21° C. CAME ABOUT IN GERMANY.

In Germany the Governmental Works published about the question of the flash point are the following: they are very difficult to get, and Nos. 1, 2, and 3 I had to procure by diplomatic means:—

1. *Materials for the Technical Foundation of a Framing of Rules regarding the Traffic in Petroleum*, besides draughts from the Imperial Health Office, 1880. Imperial Printing Office.

2. *Report concerning the Work of the Commission for the Choosing of the Petroleum Tester*. North German Publishing Institution, 1881.

3. *Imperial Law, Memorandum, and Supplement*. Reichstag, 5th period of legislature, 2nd session, 1882.

4. *Directions Regarding the Abel's Petroleum Tester, etc.*, by the Imperial Normal Standards Commission. Berlin, 1883. C. Heymann's Publishing Office.

We find in these works nearly everything together which has led in Germany to the fixing of the test at only 69·8° F. (Abel). I believe that it is desirable to discuss the standpoint taken up by the authorities about ten or fifteen years ago, and to add to this discussion the remarks to which the contents of the publications themselves and the circumstances and knowledge which have changed since that time give rise.

The Materials contain chiefly a series of experiments and a critical discussion of the different methods for determining the flash and burning point, beside drawings of the different apparatus (about twenty), and, moreover, an introduction and a conclusion given by the Board of Health. They served as the foundation to the Report, which contains the stenographic report of a three days' (October 26 to 28, 1880) discussion of the Commission for the selection of petroleum tester. The Commission numbered twenty members—that is to say, seven from the trade, Rosenbaum, Hirsch, Frentzel, Braum, Roeder, F. Schütte, and L. Sanders; one belonged to the Petroleum Industry, Friesland, from the Refinery of Korff, in Bremen; three, Koehler, Von Kehler, and Hoffmann, to the different ministries; five were physicists and chemists, A. W. Hoffmann, Weber, Engler (Carlsruhe), Knapp (Brunswick) and Brunnengräber (Apothecary to the Court, Rostock). With these latter we must reckon the members of the Board of Health and the Imperial Standards Commission, Struck, President, Wollfhügel, Sell, and Löwenherz.

No. 3 contains the results of these discussions, and of the experiments carried on by the Board of Health, which have led to the ordinance and the final fixing of the minimum tests of 21° C. (Abel). The Memorandum gives explanations of the five sections of the Act, the Supplement a report by one of the directors of the Board of Health, Dr. Struck, about the experiments and considerations which led to the fixing of a test of 68·0° F. (brought to 71·6° F. on account of the great barometrical variations in the different parts of Germany).

No. 4 is a pamphlet to be found in the trade which gives the description and regulations about the treatment of the official Abel petroleum tester. It contains, moreover, the same Memorandum as No. 3, and a Supplement which has been taken over mostly from Nos. 1, and 3, besides two pages where the objections against the fixing of a test, which is 2 degrees lower than the English of 73·4° F., are discussed.

1.—The Materials.—The Materials contain, as said before, a thorough examination and comparison of about twenty different apparatus and methods for test-



ing of petroleum, besides sketches. From the introduction and the conclusion something should be mentioned. We are reminded of the starting of the Standard Oil Company in the year 1876, which ruled the whole petroleum trade and could raise the prices as it liked, and one which was instituted later, "The Tide-water Pipe-line Company," the competition of which is to this day (1880) of the best influence for the regulation of petroleum prices. The condition has, as is known, changed again in so far that the Standard Oil Trust (established 1882) has become much more powerful, and at the present moment almost alone fixes the prices, etc., and competes almost only with Baku alone. The "Independent Ones" in America, and with them the firm Ph. Poth in Mannheim, dispose of about 15 per cent. of the American petroleum. The Refinery of Korff in Bremen is entirely dependent on the Standard Oil Trust.

The Board of Health, moreover, points to the intentional falsification with naphtha, which has caused a great number of accidents. The addition of naphtha, it is said, no longer took place in the year 1880. It runs, page 4, . . . "since that time naphtha has found use in other branches of industry; its price has become equal to or even higher than that of petroleum, and the falsifying of petroleum is no longer remunerative. If, in spite of that, the statistics mention a steady increase of the fires caused by the petroleum traffic in proportion to those brought about by other causes, then the causes must be looked for in other circumstances." But it is seen from the following page that these very "other circumstances" is again naphtha, not added, it is true, to the petroleum specially for adulterating purposes, but, what amounts to the same thing, simply left in the petroleum through insufficient fractionation. Whether the Standard Oil, No. 1, with 6 or 8 per cent. naphtha (of which 5 per cent. boils from  $131^{\circ}\text{F.}$  to  $212^{\circ}\text{F.}$ ), has this naphtha specially added, or whether at the distillation it immediately flows into the petroleum tank instead of the naphtha tank is surely all the same. It is to be regretted that the Board of Health seems never to have carried out a fractional distillation of Standard Oil, No. 1, similar to that which I mentioned previously. For the rectification of the first distillation products Column apparatus are used in the refineries. It might then also be pointed out that, although the price of petroleum and naphtha is nearly the same, it yet offers a great advantage to the manufacturers to dispose of a certain part of the latter product as burning oil, as otherwise the quantity would be too great and the price of naphtha would fall.

The Board of Health would perhaps have come to the conclusion thereby that an oil with about 5 per cent. naphtha would scarcely suffice for the demand put forward by them, viz., that ordinary use give occasion neither to danger of fire nor explosion, and remembering the expression of Chandler, which Dr. Struck mentions in his paper to the Reichstag, page 16—"against that it must be now distinctly pointed out that it is not possible to make gasolin, naphtha, or benzine quite safe by any addition whatever, and that no oil is without danger which can be ignited under temperature of air." These words, written more than twenty years ago, can be placed as a motto in front of the whole flash point question.

There occurs on page six, also, the standpoint which the Board of Health has taken up, and which has only latterly proved itself to be a very one-sided one, namely, to consider the danger of explosion of the petroleum vapour formed in the lamps as the most important. We know now that the number of real explosions is very small. The Imperial Standards Commission estimates them in their publication about the Construction of Lamps, 1893, at 1 per cent., at the most, of the accidents caused by petroleum. The standpoint of the Board of Health was at that time easily explained; even now a considerable number of the accidents is

attributed to the explosion of lamps. This almost exclusive consideration of the danger of explosion by the Board of Health, and by others (for instance, Prof. Weber), is found again on the last pages of the directions regarding the Abel petroleum tester when the flash point of  $69.8^{\circ}\text{F.}$  had already been legally introduced.

On page 69 the Board of Health treats on the influence of petroleum adulterated by the addition of volatile hydrocarbons. It is evident from the experiments that an addition of  $2\frac{1}{2}$  per cent. naphtha reduces the flash point (Bernstein's apparatus) from  $87.8^{\circ}\text{F.}$  to  $66.2^{\circ}\text{F.}$  Therefore,  $20^{\circ}\text{F.}$  and  $\frac{1}{2}$  per cent. naphtha causes a reduction of  $5.5^{\circ}\text{F.}$  Let it be now pointed out here that these considerations, and a complete possible fractionation of the ordinary petroleum such as we demand, would have sufficed to place at any rate as very much exaggerated the report by Schütte in the debate of the Commission about the price of oil of  $66.2^{\circ}\text{F.}$  to  $68.0^{\circ}\text{F.}$  compared with that of about  $73.4^{\circ}\text{F.}$  (Abel test), sent to him from America. But they are not at all mentioned in the discussion. (See below.)

Valuable comparison of the different apparatus with two sorts of trade petroleum is given by the Board of Health on page 73. The result of it is that, firstly, the lowest and almost equal numbers are obtained with the apparatus of Abel, Tagliabue, Doxrud, and Weise; that, secondly, for oil of  $71.6^{\circ}\text{F.}$  to  $71.6^{\circ}\text{F.}$  (Abel), different apparatus give flash points of  $80.6^{\circ}\text{F.}$  to  $116.6^{\circ}\text{F.}$  (in the Danish apparatus even  $113.0^{\circ}\text{F.}$  to  $122.0^{\circ}\text{F.}$ ); in the apparatus by Kuchla  $167.0^{\circ}\text{F.}$  to  $176.0^{\circ}\text{F.}$ ; that, thirdly, flash point and igniting point can show a difference of from  $16.2^{\circ}\text{F.}$  to  $23.4^{\circ}\text{F.}$

On page 47 the Board of Health gives, so to say, its conclusion in the following sentence, printed in italics:—"In no case must the igniting point be asked lower in Germany than in England, so that the article found unreliable in England is not brought upon the German market." The trade has particularly, and with success, opposed this sentence in the now following discussion of the petroleum tester.

2. The Report.—The debates in the Commission are opened by the representative of the trade, that is to say, by Mr. F. Schütte, Bremen. As the following discussion, and also later the writings of the Board of Health and the final fixing of the test of  $69.8^{\circ}\text{F.}$  have been influenced greatly by some of the representations and figures given by Schütte, it is necessary to consider this introductory speech a little closer. Should we be successful in proving that it contains something wholly or half false or doubtful, then it is evident that the premises which led to the introduction of so low a test as  $61.8^{\circ}\text{F.}$  are very debatable, and this test must be looked upon as an error, although it may be explainable. I think that such is the case. There are, specially, two declarations of Schütte which, according to my opinion, deserve to be critically considered—declarations which have been sent to him from America and by Redwood of London, and for which he himself does not need to be responsible. Let us make a remark before we proceed to the discussion of these two points. After having declared he could not agree with the sentences from the "Materials," which I mentioned just now, Schütte begins his speech with the words: "I believe that the interest of the merchants and that of the public are very closely connected." Well, one can, of course, assert this of all products of trade; everything depends upon the kind of this "close connection." Then let us consider two things. First, that the merchants of ten or fifteen years ago were mostly agents or officials of the Standard Oil Trust. It is no longer a free trade; the public as consumer stands directly opposed to the Standard Oil Trust (the same as, for instance, in America the Sugar Trust).

(To be continued.)



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## Food and Sanitation.

SATURDAY, AUGUST 1ST, 1896.

### PURE WATER.

LONDONERS love a humbug, and the bigger it is the more intense is their affection for it. In a really civilised country such enemies of society as Lord James, responsible for binding Londoners hand and foot and compelling them to drink semi-filtered sewage and drainage, or perish of thirst, would be summarily despatched to a lethal chamber along with the "expert liars," who testify regularly that our semi-filtered sewage and drainage is the very best of all waters, in this very best of all possible worlds. The East End of London is just now expiating its love of humbug by a water famine, tempered by some three occasional

hours of liquid disease-distributing filth, miscalled water, being turned on for its use. One journal commenting on the scandal says:—

"We know not whether the East London Water Company are rejoicing in the rain. But if they are, their consumers need not be over glad. For it is well known that it is more than dangerous for the companies to keep their intakes open in the Thames when the head of the flood water comes down. Such a course leads directly to pollution, which the filters do not overcome, and there is good reason to believe that it is followed by a wave of enteric fever. We observe that the company's reply to Mr. Marks says nothing whatever of those 'negotiations' with the New River Company which Mr. Chaplin mentioned, and which he probably advised. Therefore we repeat: the East London can get and could weeks ago have got all the water they need from the New River, at a small price. Their plain duty was to do so long before the storage ran down. When, in spite of last year's warning, they failed to do this, it was at least their duty to buy the necessary water to flush the closets and fill the cisterns of their helpless people. Their obstinate refusal simply means that they do not care a ten-pound note for the comfort or health of a thousand homes."

This is just what might be expected from the *Daily Chronicle*, or any of our other enlightened examples of the potent and far-seeing Press. There is no word of denunciation of the monopoly which collects water polluted by the sewage and drainage of thousands of animals and men, puts it through a farcical cleansing process, and gives London Hobson's choice, that water or none. London's water supply is a scandal, utterly indefensible by any save creatures of the Lord James stamp, but in the opinion of our newspapers the grievance is that we have not more of it. Consider the precise situation were cholera to get a footing in London and district. Our existing filtering beds are absolutely unreliable even at their best for freeing water from disease germs. In thousands of homes that deadly abomination, the ordinary household filter, is in use to still further pollute the water used. Common sense says we should adopt the healthy and feasible plan of bringing really pure water from Wales, but Lord James and grasping monopoly prevents us and ties us to semi-filtered sewage and drainage. Even benighted India can set us an example in this.

The municipal authorities of Darjiling, with the sanction of the Government of India, have determined to apply to their waterworks the method of filtration due to the late M. Pasteur, and applied to drinking water by M. Chamberland, the present Chef de Service of the Pasteur Institute at Paris. The necessary installation has been made by Messrs. J. Defries and Sons, Limited, the sole licensees for the British Empire, and is now ready for shipment to their Indian agents, Messrs. Heatly and Gresham, Limited, of Calcutta, under whose direction it will be put into operation. It consists of 38 cells of tough cast iron, served with an acid-resisting composition, arranged in four rows, each cell connected by wrought-iron pipes to cast-iron mains, which deliver into cast-iron collecting mains, all protected by a similar composition. The cells are fitted with gun-metal valves, enabling any one or group to be cut out for cleaning or other reasons; and a travelling crane enables any one to be readily picked up if required. Each cell contains a number of Pasteur filter-tubes in the well-known form, fixed into solid elastic bushes, which, without any mechanism, make automatically an impermeable joint. The inlet and outlet pipes are controlled by sluice valves in the ordinary way, and by means of a small air compressor, the mechanical and bacterial soundness of each cell, or any group of cells, with their constituent filter tubes, can be immediately tested. This is owing to the circumstance, apparently peculiar to the remarkable medium of which the Pasteur



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tubes are composed, that, when soaked with water, the minutest invisible flaw will permit the passage of air under a pressure of 10 lb. to 15 lb. per square inch, while, if sound, it will retain it. The clearing is effected by means of a circulating pump, fed from a small boiler fitted with Gresham's combination injector. This forces through the tubes of any cell or group of cells a solvent—usually a diluted acid—by which the dialytic deposit in the pores of the filter tubes is removed, while the whole of the filtering system is sterilised. This process only entails the passage of an inappreciable quantity of acid per gallon of filtered water during the day; and as the acid can be used again and again, it is accordingly both economical and free from objection. The whole of the parts of the installation are interchangeable. The installation will be worked entirely by one man, who could, indeed, attend to one of much larger size. Its nominal output, which could, if necessary, be exceeded, is 150,000 gallons per day; and it will be served by a gravitation supply under a net head of about 65 feet. The tubes wear for practically an indefinite period; and the cost of upkeep is accordingly relatively small. It will be remembered that it was found by the French War Office in the years 1890 to 1893 that wherever the Pasteur Filter was applied, typhoid fever had disappeared. This result was confirmed and extended to other waterborne disease, such as cholera in General Zurlinden's War Office report of last year; and, as the experience of the department is based on the application of these filters to some quarter of a million quarters chosen as the most insanitary in the French possessions, it is to be expected that the enlightened action of the Darjiling Municipality and the Indian Government will be followed by similar results. It is already reported that after the tentative application of a smaller installation at the Darjiling Schools, the dysentery which had previously affected the pupils disappeared.

There appears to be little hope that the water ring can be broken, and that being the case, it might be worth while to demand that our water monopolists should at least introduce efficient filtration on the Pasteur principle, in place of their existing discredited humbug. If we must drink their semi-filtered sewage and drainage, it should be rendered really incapable of harming us, which is not the case at present.

In another respect this enterprise of an Indian municipality is an object lesson. How many scores of English, Irish, Scotch and Welsh local authorities ought to profit by it, but do not?

If we require a type for illustrative purposes we can find it at Looe, which has just been engaging the attention of the Liskeard District Council. The recent outbreak of typhoid fever at West Looe, together with the insufficient and impure water supply, has occupied the serious attention of the responsible authorities, and the water from the West Looe reservoir, the "Shoot," and other sources has been specially and

carefully analysed, and the detailed report was presented to the Council on Saturday by Mr. W. Nettle, medical officer of health.

The report, which was dated July 14, stated that "during the past few weeks there has been a considerable amount of sickness in the town of West Looe. At first, the disease, which was fairly widespread in the lower part of the town, apparently bore some resemblance to influenza, and a death was registered as having occurred from that disease during the second week in June. On June 18, however, two cases of typhoid fever were notified, on the 19th a third case, and on June 23 five other cases, making eight in all, since which date no fresh notifications have been received. The cases were not in any way generally distributed. They all show a distinct grouping around the water supply from a particular spring called 'The Shoot,' in West Looe-hill, but in searching for the factories concerned in the outbreak, the general sanitary state of the town, the sewerage and drainage, and the milk and water supplies were investigated." Proceeding to review each of these possible

## AGENCIES OF FEVER DISTRIBUTION,

the Medical Officer stated that the streets are for the most part kept fairly clean. The houses of the poorer classes are in fair condition for so old a town, but in the lower part, where the houses are more crowded together, the majority of them have no space outside the four walls. A few cases of overcrowding are met with, but it does not occur to any great extent, and as there appears to be no alternative accommodation, even if suppressed in one case, it would recur in another. A considerable number of houses have no sanitary accommodation whatever; the excreta are disposed of by throwing on ash-heaps where there are gardens, and in other cases over the quay into the river. House refuse is removed by the Sanitary Authority on three days a week. But while the general sanitary condition of the town is, in some respects, unsatisfactory, it is by no means such as to invite an outbreak of typhoid fever. Describing the system of sewerage, Dr. Nettle pointed out that all the sewers discharge into the river, and must frequently be tide-locked during the large part of 24 hours. Very few of the house drains are properly ventilated, but he did not think the outbreak could be attributed to sewer emanations.

## THE MILK AND WATER SUPPLIES.

Proceeding, the Medical Officer pointed out that while the persons attacked with typhoid obtained their milk from different vendors, all the vendors obtained their water supply from the same source, viz., the Shoot. Some of the dairies were not registered, and one or two he found in a not very creditable condition. In one instance a cupboard underneath a staircase, with no light or ventilation, served as a so-called dairy. The two main water supplies were reported in 1891 as being liable to pollution. A considerable number of the inhabitants drink the water coming from the Shoot, the source of which is somewhat uncertain and difficult to trace; but in 1892 an effort was made, and for some little distance it was piped, but at length it appeared to spring from underneath some dwelling-houses, and the source of the stream beyond that point has never been discovered. The water, on being analysed, was in 1892 found to be clear and fit for drinking purposes, although with slight traces of animal pollution. Describing

## THE WEST LOOE RESERVOIR,

which is the property of the town trustees, Dr. Nettle recapitulated the information contained in his former reports, showing that the reservoir is situated at so low a level that a very large number of the houses are unable to be supplied by it. The bank of the open stream which feeds the reservoir



is at present littered with paper, tin cans, and refuse of all descriptions, while the steep cultivated hill-sides on either side are partially dressed with the house refuse removed by the scavenger from East or West Looe. The result is that every shower of rain brings down the earth, containing decayed animal and vegetable matter, dead leaves, &c., into the stream. Cattle also wander into the stream and pollute the water, which flows over the filter into the reservoir entirely uncleansed. In 1892 the trustees had notice from the sanitary authority to pipe the stream from its source, but nothing has been done. When analysed in that year the water was found to be fit for drinking purposes. Proceeding, the Medical Officer said: With

#### WATER SO LIABLE TO POLLUTION

as these two supplies are, it naturally came under suspicion when typhoid broke out in the town, and especially when only very slight evidence could be found implicating as a cause of the outbreak any one of the other possible agencies. Samples of both the Shoot and reservoir water were sent to the Clinical Research Association, London, with a request for a chemical analysis and a bacteriological examination, from which it appears that, as not infrequently happens, a chemical analysis fails to detect any definite impurity in water, whilst a bacteriological examination furnishes conclusive evidence of contamination by faecal matter. Thus, in the Shoot water the analyst says chemically it is on the whole a purer water than the reservoir water, and bright and well filtered. It is a water quite fitted for drinking (in the absence of any specific pathogenic organisms). The bacteriological report, however, says:—

This water contains a large number of organisms, including several of the commoner water organisms, and the *bacillus coli communis* in distinct quantity. We have failed to discover the *bacillus typhi abdominalis*. We consider, however, that the presence of the *bacillus coli communis* is presumptive evidence of contamination with sewage.

Here, then, we have in the Shoot water a distinct quantity of the *bacillus coli*, a certain index of faecal pollution, and although the examination has failed to discover the particular bacillus of typhoid in the sample of water sent, it will be remembered that all the cases notified obtained their water supply from this source, and the dairymen used the water for washing their milk pans, &c., so that I think there can be no reasonable doubt but that

#### THE SHOOT WATER WAS THE CAUSE OF THE OUTBREAK.

The exact cause of the specific pollution of the water is not certain, but probably the excreta from some of the earlier cases, thought to be influenza, were thrown on ash-heaps, etc., in the gardens, and so drained down through and contaminated the water.

The reservoir water is reported to be "of somewhat inferior purity from a chemical point of view. It is of about the character of the water obtained from the Thames, when the river is somewhat flooded. After proper filtration, however, it would be a fairly good drinking water." The bacteriological report says:—

This water contains only a fair number of organisms, and a careful search for the *bacillus coli* and the *bacillus typhi* failed to reveal their presence. Our examination, therefore, leads us to say that we can find no evidence of sewage contamination.

The reservoir water may, therefore, be considered to have had no share in causing the outbreak of typhoid, but still there can be no doubt but that the water is extremely liable to pollution, and I am strongly of opinion that no arrangement for West Looe can be considered satisfactory which does not provide for bringing into the town

#### WATER FROM SOME UNEXCEPTIONAL SOURCE.

It is certainly an undertaking which deserves the most

serious and favourable consideration of the District Council. Notices have been issued warning the inhabitants against drinking unboiled Shoot water or unboiled milk. The sewers and drains have been regularly flushed and disinfected, and precautions have been sent to each infected house, with suggestions for preventing the spread of the disease. In the absence of an Isolation Hospital we were unable to remove patients, however bad their surroundings might be."

Looe is not the only place which ought to follow the example of Darjiling. There is no money so wisely spent as that spent on good sanitary work.

#### THE PRESS AND THE REPORT OF THE SELECT COMMITTEE ON ADULTERATION.

IF it were possible for us to feel any more contempt than we have always felt for the leading article bore, the scores of those atrocities concocted over the report on adulteration just issued would assist us. It would be hard to select the most stupid, because each has its own particular, rubbishy flavour. It came as a shock to us to read the following in the *Daily News* of July 27:—

"The report which now appears is, on the whole, a fair digest of the evidence, the constitution of the Committee having been such as to ensure a reasonably judicial attitude where evidence has involved contradictions not merely in matters of opinion, but in matters of alleged fact. No Committee could have heard the non-controversial evidence without concluding that the existing Acts have done a great public service in raising the purity of our food supply, and no reasonably constituted Committee could have heard the rest of the evidence without also concluding that defects nevertheless exist in the law, or in its interpretation, which call for remedial measures.

"Legal ingenuity, for instance, aided and abetted by Mr. Justice Hawkins, discovered some time since that, while it was clearly an offence to sell bread or cake containing alum (a substance injurious to health), it was nevertheless no offence to sell baking powder chiefly composed of alum, inasmuch as baking powder, although an article to be mixed with food and eaten, was not itself an article of food, as it did not directly nourish. The sale of such injurious powder has therefore continued with impunity. The Committee recommends an amendment in the definition of 'food' to cover cases of this sort.

"Hitherto a retail vendor of adulterated food, even though he sold it innocently and as purchased from the wholesale dealer, has been liable to penalty, unless he could show that he bought with a specific warranty. It is now recommended, as provided in Sir Charles Cameron's Bill of 1894, that a mere invoice from the wholesale dealer shall have the force of a warranty. It is at the same time recommended that legislation should provide facilities for the successful prosecution of the wholesale offender, and that importers of foreign goods should not only produce guarantees from the original vendors, but should also submit to the Customs evidence of measures taken to ascertain that the goods conform with the guarantees. Mixtures like coffee and chicory, cocoa and starch, mustard and flour, and the like, are to be clearly and legibly labelled as mixtures. Skimmed condensed milk almost wholly deprived of fat is a large article of commerce. It is true that it usually bears on its label a statement to the effect that the contents of the tin have been 'partially skimmed,' but even this modified announcement is often made in letters so small as to be easily overlooked, and from a recent investigation it would appear probable that infant mortality is augmented by the ignorant use of this food. It is now recommended that such milk should be described in large and legible type as 'Condensed Skimmed Milk,'



with an additional notification of its unsuitability for feeding infants and young children.

"The sale of margarine is already regulated by a special Act of Parliament, but it is now recommended that the mixing for sale of margarine and butter should be altogether prohibited, and likewise the artificial colouring of the former in resemblance to or imitation of butter. These recommendations will be joyously hailed by the farmer, but freely denounced by the makers and vendors of margarine as a meddlesome interference with legitimate commerce in a popular article. If margarine, for its own sake, is really so loved by the public as some witnesses would have us believe, it is perhaps not unreasonable to ask that it should rely on its own intrinsic attractions without masquerading as butter. This question, however, is of less importance since the development of cold storage transit has brought to our doors the butter of Australia and New Zealand, in addition to the already vast quantities of foreign butter which already supplemented our home production. The result is that the great disparity between the prices of butter and good margarine is diminishing, and with it the temptation towards fraudulent substitution.

"The most radical recommendation in the Report is contained in the proposition to construct a new permanent Committee or 'Court of Reference,' substantially in accordance with the proposal urged on the Select Committee by the Society of Public Analysts. This Committee is to act as an authority on scientific and other questions arising under the Food Acts, and is to be empowered at its discretion to prescribe standards and limits of the quality and purity of food, as well as to regulate the admissibility of the use of various preservatives and colouring materials. This committee or 'Court' is to be connected with the Board of Trade, and is to consist of the chief Government chemist, of nominees of the Local Government Board, the Board of Agriculture, the General Medical Council, the Institute of Chemistry, and the Pharmaceutical Society, together with 'analysts of repute' and 'other scientists,' and also representatives of trade and manufacture. The Government chemists are, as heretofore, to act as actual analytical referees in disputed cases, but their procedure, like that of the public analysts, is to be in conformity with the decisions of the superior Standard Committee. This should end the conflicts between the Government chemists and the public analysts. The latter have for twenty years complained, rightly or wrongly, of bad and obsolete chemistry at Somerset House, and more particularly of adoption there of standards and limits so low as to allow watered and skimmed milk to pass muster with impunity. The Select Committee has heard at great length the indictment preferred by the public analysts against Somerset House, and also the evidence tendered in rejoinder by that department, and although the report has a kindly tendency to avoid unduly hurting the feelings of Government officials, it is nevertheless to be noted that the recommendation as to a new Court of Reference is in direct opposition to the views expressed on behalf of Somerset House. It is a recommendation that will be regarded with satisfaction by the public analysts and by the local authorities charged with administering the Acts, and one that should, if carried out, convey an increased sense of security to honest traders as well as to the public. Various recommendations are made as to increased facilities for obtaining samples, as to procedure, and as to penalties for sale of adulterated goods. Among these is the proposed enactment of a minimum penalty of £5 for a second offence, with discretion to magistrates, in the case of a third or subsequent offence, to substitute imprisonment without the option of a fine."

The *Daily News* had better beware. It is against the traditions and practice of the English press that any person should write a leading article that is intelligent. Dangerous innovations like unto the above

should be firmly squelched if our daily drivellers are to maintain their unquestioned pre-eminence in deadly dullness and ignorance, and the average man to still regard it as a holy and wholesome thing to slaughter a leader writer.

#### PURE BEER.

WITH the cocksureness born of an utter absence of knowledge of the meaning of the word "beer," one of the superior persons who spoils paper and wastes ink in *Times* leading articles has been testimonialising the swipes now masquerading as English ale. Mr. Cuthbert Quilter, M.P., has replied to him, saying:—

"I crave a little space to reply to that portion of the leading article in the *Times* of the 24th inst., upon the report of the Food Products Adulteration Committee, which refers to this question.

"The article conveys the impression that the matter has been fully dealt with by that committee, whereas the question of the definition of 'beer' was not only not included in the reference, but only three small paragraphs of the report (which consists of 40 pages of printed matter) deal with beer at all, and, taken as a whole, the report, far from being adverse, is distinctly favourable to the views of the promoters of the pure beer movement.

"The Pure Beer Bill was withdrawn on March 25 last upon the promise of the Chancellor of the Exchequer that he would appoint a committee of experts and others to inquire into the questions it raised, which committee he is still at great pains endeavouring to select. Under these circumstances I must respectfully protest against the sweeping assertion that 'the pure beer definition has totally broken down.' I regret also that the article, besides prejudging the decision of a committee yet to be appointed, is an apology for wholesale adulteration.

"Unless I have mistaken the drift of public opinion both in and out of the House of Commons, it is setting more strongly than heretofore in the direction of insuring that the consumer should obtain the exact article he supposes he is purchasing. It would be in harmony with English ideas of honesty if such were the case, and any loss the ingenious inventor might sustain would be more than counterbalanced by the gain to public health and morality."

There is something to admire in Mr. Quilter's optimism, even if it be at the expense of his common sense. Doesn't he know that the brewers, their nominees, hired bravos, spadassins or whatever description they prefer to rank under dominate the Lords and the Commons, that they pay the piper for Liberals or Tories as suits their swindle, and are not fools enough to not insist upon calling the tune? When they rob the public of hundreds of thousands of pounds, by mendacious prospectuses, we don't put them into gaol—we make peers of them. Go to, Mr. Quilter, we may imagine pure beer, but we won't get it. Here are, even as we write, a number of House of Commons worms, after much deliberation, declaring that beer as brewed in England to-day is a far more wholesome and refreshing beverage than in the days when it was supposed to be made entirely of malt and hops. Following in the steps of Germany, the brewer has entered into alliance with the chemist, and with the most satisfactory results. Other ingredients are taking the place of malt and hops. To meet the change, the old definition of beer has been altered. The report declares that there is no other adulteration of beer than the addition of too much salt. There isn't a lie in a hundred true, and this lie of the House of Commons' select committee of bipeds without brains, sense or feathers, is no exception to the other lies we have come across. The beer swindle has come to stay.



## ILLUMINING ROCKFELLER'S PATH TO HEAVEN.

ROCKFELLER is morally responsible for more deaths by torture than Torquemada, but he is a millionaire, and his inquisition is not abolished. Mundellas fall down in abject worship of the fire-king, and "experts" lie at his behest with a grandeur of language not given to non-experts. These are some of the latest illuminations of Rockfeller's path to glory:—

"Mr. and Mrs. Alvinus Allen, 10, Cardigan-street, Islington, were retiring to bed, Mr. Allen, in front, carrying the lamp, when suddenly there was a loud report, and at the same moment Mrs. Allen saw her husband was in flames. She seized a mat but he fell downstairs, and she, in trying to tear away his burning clothes, fell too. A lodger found them beneath a mass of flames rising 4ft. high. Allen afterwards died in the hospital. The lamp was an 8½d. one, with a glass reservoir. It had been in use for eight or nine years, and twelve months ago had a new burner affixed. Col. Rudd, Inspector L.C.C., at the inquest on Thursday, thought the explosion was caused by a gust of wind down the chimney.

"Mr. Langham held an inquest at St. Bartholomew's Hospital, on July 23, on the body of Annie Davies, aged 28, the wife of a butcher, living at 1, Danbury-street, Graham-road, Islington, who was burned to death in consequence of the explosion of a paraffin oil stove on Tuesday. The deceased was only married the previous day, and her husband, who identified her body, was so grief-stricken that he had to be led out of court. It appeared that on Tuesday afternoon two men named Collings and Tiddart heard a woman screaming in No. 1, Danbury-street. On entering the house they found the deceased enveloped in flames. After her burning clothes had been removed she was conveyed to the hospital, where she succumbed from shock the same day. She explained before her death that she was filling the stove whilst it was alight. Suddenly there was an explosion, and her clothing was at once ablaze. In returning a verdict of 'Accidental death' the Coroner and jury expressed sympathy with the husband."

At Rockfeller's behest, and to continue these human torches, experts lie that 73° flash-point is safe, to the end that Rockfeller may get rid of 40 per cent. of refuse oil, sent here because America will not allow it to be used there. And this is a Christian country!

## CORRESPONDENCE.

## THE VINEGAR TRADE.

To the Editor of FOOD AND SANITATION.

SIR,—I beg to enclose for your perusal a cutting from the *Grocers' Gazette* of 18th inst. From it you will see no less than four retail grocers were at one police-court convicted for selling impure vinegar. I quite believe they may have been misled as to the quality of the article in question, as I know travellers frequently obtain orders by misrepresenting the quality of the goods they offer, and very few grocers can distinguish between a pure and impure vinegar, and in purchasing they rely on the assurances then given them.

If the sale of impure vinegar is to be suppressed, I believe the best course to adopt is to place all producers of that article under supervision, as it is with them the fault almost invariably lies, and for that reason they and not the grocers ought to bear the penalties, and as the number of vinegar brewers and makers, as compared with the retailers, of vinegar is very small, the cost of supervision would not be heavy. I believe I can suggest a scheme which would prevent much of the adulteration now carried on; but the question is, how can such a scheme be legalised so that it may be duly enforced?—Yours, etc.

VINEGAR BREWER.

## AN UNFORTUNATE BRENTFORD MILK SELLER.

ON July 11, at Brentford Petty Sessions, a well-known Brentford cowkeeper and milkman, Mr. Geo. White, who lives at Windmill-road, was summoned by Mr. Walter Tyler, the Inspector under the Food and Drugs Act for the Western Division of Middlesex, for having sold milk which contained 11 per cent. of added water.—Mr. Thomas Woodbridge appeared for the defendant and said he admitted the facts of the case.—Mr. W. Tyler said that by so doing it was only necessary to give formal evidence, and to prove his case he produced the analyst's certificate, which testified that the milk contained 11 per cent. of added water.—Mr. Woodbridge said he did not dispute that.—Cross-examined, Mr. Tyler said he knew the defendant was in a rather large way of business, and kept about twenty cows. In the performance of his duty witness had frequently been to Mr. White's premises within the last few years and had taken samples. He had done this about four or five times a year.—Mr. Woodbridge: And the analysis had always been satisfactory?—Yes.—The sample in this particular case was taken, not at the shop, but from a man named Chas. Percy?—Yes.—As a matter of fact, do you know that the man has since been discharged?—No, I don't know, but I would not doubt the assertion.—Mr. White was not with Percy when you took the sample?—No.—Mr. Woodbridge, for the defendant, said his client always kept his cows in good condition, and on the day in question, June 24, he had a surplus quantity of 40 quarts, so there was no necessity that his milk should have been added to. As soon as Percy came home and said that a sample of milk had been taken, the defendant tested what he brought back, comparing it with the milk in the shop, and as a result he discovered that it was deficient in cream. The Wesleyan minister of the town had, moreover, distinctly told defendant that he saw the man Percy put water in the milk, but the defendant, of course, could not deny that he was legally responsible for the conduct of his dishonest servants.

Mr. White, defendant, was then sworn and bore out his solicitor's statement. He added that he measured the milk out to Percy, and it was then pure and fresh from the cows.—Mr. Tyler: You are rather unfortunate, are you not, with your men?—Witness: On one occasion before I was in a similar case.—Mr. Woodbridge said that was some time ago.—Witness said it was three years ago, and he was then ordered to pay the costs.—In answer to the bench the warrant officer (P.S. Linnett) stated that on December 20th, 1890, the defendant was fined 20s. for adulteration; on February 8th, 1893, he was fined 20s. and 10s. 6d. costs for a similar offence; on August 6th, 1893, he was fined £5, or a month's imprisonment in default, and on August 19th on being summoned again for adulteration he was ordered to pay £1 18s. costs, his servants then being to blame.

After a long consultation the Chairman said the magistrates had very carefully considered the case, as the defendant had been before the court on so many previous occasions. He, of course, was fully liable for the misbehaviour of his unscrupulous servants, and it was his duty to see that they did not commit these swindles. Since 1893 defendant appeared to be conducting his business in a slightly better manner, and he must continue to be still more careful. The Royal Commission had suggested that after three convictions for adulteration, imprisonment, without the option of a fine, should be enforced. The magistrates, however, would not adhere to the rule, but would take a comparatively lenient course, and impose a fine of £4 and costs. The money was at once paid.

## COCOA.

AT Loughborough Petty Sessions, on July 15, Edwin Moss, grocer, High-street, Loughborough, was summoned for selling cocoa not of the quality, nature, and substance demanded, on May 28.—Mr. Rowlatt prosecuted for the police, and Mr. Wilfred Moss defended.—Mr. Rowlatt said the police constable asked, at defendant's shop, for some cocoa, and was supplied with an article which only contained something under 25 per cent.—P. C. Pinfield stated that on the day named he went to defendant's shop on the instructions of the Deputy Chief Constable. He asked for half a pound of ground ginger, and half a pound of loose cocoa. He was served by one of the assistants in the shop, and paid 6d. for the ginger and 3½d. for the cocoa. Witness then handed the things to the Deputy Chief Constable, who was outside the shop, and he came in. He told the assistant he wanted the cocoa for analysis, and young Mr. Moss then said, "We have sold it without a label." Mr. Smith asked where they were, and the assistant



said, "They're in this tin on the shelf at the back," and he got the tin out, but there were no labels in it. Cross-examined: Witness did not know anything about the price of cocoa, and did not know that pure cocoa was 2s. 8d. per lb., or that 7d. per lb. was a ridiculously small price for pure cocoa.—Deputy Chief Constable Smith proved the division into three packets, one of which he gave to defendant, another he produced, and the third he sent to the analyst, Dr. Dyer. On June 26 he received the certificate produced, stating that the same contained not exceeding 25 per cent. of cocoa, and 75 per cent. in about equal portions of sugar and starch.—Cross-examined: Witness pleaded ignorance as to the price of cocoa.—Mr. Wilfred Moss submitted that it was recognised that commercial cocoa, even the best brands, only contained from 23 to 27 per cent. of cocoa, but so long as the admixture was notified as not being pure cocoa it was all right. In this case there was no evidence that pure or unmixed cocoa was asked for, and having regard to what was generally recognised as cocoa he contended that the purchaser received that which he might reasonably expect. The price paid was less than a fourth that of the market price of cocoa, as advertised in Mr. Moss's list. Further, the sale was not by Mr. Moss, but by his assistant, and he should prove that defendant had always instructed his assistants whenever they sold this mixture to call it cocoa powder, and to affix a label stating that it was so. The fixing of this label would protect the defendant, and it was by pure inadvertence that the assistant omitted to put one on in this case. In addition to that Mr. Moss contended that the master was not responsible for the act of his assistant, when the act was contrary to his instructions.—Mr. Rowlatt: If the label had been on defendant would not have been here.—The defendant, Mr. Edwin Moss, went into the box, and produced his price list, showing that cocoa varied in price considerably. Van Houten's was sold at 2s. 9d. per lb., pure cocoa powder, equal to any advertised, was 2s. 8d., and cocoa powder 5d. and 7d. Witness had given instructions to his assistants to label this cocoa powder, and the labels were kept conveniently for the purpose. Anyone who bought cocoa should know very well that they could not get it pure at 7d. or 8d. a pound.—Cross-examined: He admitted that there should have been a label on this cocoa, and if he had served it he would have known where the labels were.—Jno. Bell, the assistant who served the constable, said their instructions were always to put a label on this cocoa powder. He forgot to put a label on that sold to the policeman. It was Thursday, and they were busy in the shop, and he had not a label handy.—By Mr. Rowlatt: Witness did not hear the conversation about the labels, as he was then at the other end of the shop.—Thomas Copley, another assistant, also gave evidence as to the instructions.—Mr. Rowlatt said that defendant's admission that this cocoa should have been labelled ended the argument as to the question of price. The question as to the liability of the master for the act of his servant was cleared by the fact that there were no labels for the assistant to put on.—The Bench having consulted in private, the Chairman said they had decided to convict, and the defendant would have to pay a penalty of 40s., including costs.—The Bench also expressed dissatisfaction with the way in which the witness Ball gave evidence.

Arthur Cumberland, grocer, Market-street, was summoned for a similar offence.—Mr. Wilfred Moss said he defended in this case also, and the points he intended to raise were precisely similar to those in the last case, so that he should advise his client to plead guilty. He did not know whether the fact of there being no labels to hand had had any influence in the decision, but in this case it would be proved that labels were ready close by.—The magistrates' clerk said the defendant must either plead guilty or not guilty.—Mr. Moss said they would have the case proved.—P.C. Pinfield proved the purchase, stating that he was served by an assistant, and paid 3d. for half a pound of cocoa. Defendant's father said, "We have sold it

without putting a label on; they have got us this time." Some labels were taken from a drawer and shown him.—Deputy Chief Constable Smith produced the certificate of analysis, showing that the sample contained 30 per cent. of cocoa and 70 per cent. of sugar and starch.—Mr. Moss submitted that the labels being kept ready for use there could be no suggestion that instructions were given which could not be carried out because there were no labels.—Defendant said the constable asked him for half a pound of cocoa at 6d. He told an assistant to serve him. The assistant had had instructions to put labels on this loose cocoa.—Chesterfield, the assistant, gave evidence proving the instructions, and admitting that he inadvertently omitted to put a label on the cocoa.—The Bench convicted, and imposed a fine of 40s.

#### WESTMINSTER TRADERS SUMMONED.

At the Westminster Police-court, on July 21, Hannah Harman, keeper of a general shop, No. 1, North-street, Westminster, was summoned for selling to John Mead a quarter of a pound of coffee, which was not of the nature, substance, and quality demanded.—Mr. Percy Gates prosecuted, and Mr. T. Duerdin Dutton defended.—The defendant pleaded guilty.—Mead said that on June 25 he entered the defendant's shop at North-street and asked for a quarter of a pound of coffee. The daughter of defendant served the commodity, and witness paid 3d. for it. When the transaction had been completed, Inspector Kirk suddenly appeared and said that the coffee should be analysed.—Mr. Gates produced the analyst's certificate, which showed that the coffee was adulterated with chicory to the extent of 46 per cent.—Mr. Dutton appealed to the magistrate to deal leniently with the defendant, although she had been summoned previously for selling adulterated butter and had been compelled to pay the heavy penalty of £6. For the last five or six years Mrs. Harman had been the victim of misfortunes. Her husband had deserted her, and, with the assistance of friends, she had been enabled to take the shop mentioned. She was employed in a humble capacity at the Government offices, and was obliged to leave the shop to the care of her daughter, who foolishly omitted to tell Mead that the article purchased was sold as a compound of coffee and chicory. Mrs. Harman had always used wrappers stating the actual character of the article sold, but as none were in stock on this occasion the purchase was made without either the wrapper or the warning. He assured the magistrate that there was no intention to defraud the purchaser, and appealed to him to inflict only a small penalty.—Mr. de Rutzen: I will hear the other cases before I determine what the penalty shall be.

JOHN BARTLETT PARKER, of 166, Vauxhall Bridge-road, was summoned for selling to John Mead a quantity of cocoa which was adulterated with 39 per cent. of added sugar and 27 per cent. of starch. Mr. Gates appeared for the Vestry. Mead said he entered the defendant's shop on the 25th June and asked for a quarter of a pound of cocoa. The assistant said: "Will you have the shilling or the eightpenny?" Witness said he would take the eightpenny article, and was immediately served. The inspector, Mr. Kirk, then appeared and told the man that the public analyst would deal with the article. Defendant: May I say one word in explanation? Mr. de Rutzen: You may say what you like. Defendant: Well, our second man was laid up with influenza, and I put on an old grocer in his place. Mead came in, and the foolish fellow sold him this as cocoa. This is the first time I have been before a magistrate, though I have been in business 25 years. A large can with a flat back and round front was produced, and the defendant pointed out that it was labelled "chocolate" in large letters. He had procured this receptacle to protect himself, and what more could he do? Mr. Gates: But I am informed that the cocoa was served from a drawer and not from the tin. Mr. de Rutzen: Well,

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A—1s. 6d. lb.; B—2s. lb.; C—2s. 6d. lb.; D—3s. lb.; E—4s. lb.

#### PURE CHINA. HT (1) 2s. lb. HT (2) 3s. 6d. lb.

Packed in  $\frac{1}{2}$  lb Bags, 1lb., 2lb., 3lb. and 5lb. Tins; in Boxes 10lbs. and 20lbs.; Half Chests 50lbs. and Chests 100lbs.

#### DELICIOUS SOLUBLE COCOA.

Prepared and manufactured in England on the popular Dutch principle.

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FINEST CHOCOLATE ALMONDS,  $\frac{1}{4}$  lb. boxes 6d. and  $\frac{1}{2}$  lb. boxes 1s.

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it is very evident that the article sold was not cocoa. I'll hear the other case now.

MARY ANN WORROW, of 15a, Kensington-place, Westminster, was also summoned for selling coffee adulterated with chicory to the extent of 68 per cent. Defendant pleaded guilty, but said she herself had been the victim of misrepresentation. She purchased the business in May, and the outgoing proprietor assured her that the stuff was genuine coffee. Mr. de Rutzen: If you people wish to protect yourselves, you can do so very easily. If you have not got coffee or cocoa, there is nothing to prevent you saying you have a nice mixture—probably more chicory or sugar than anything—which you are sure will please your customers. (Laughter.) But people must be served with what they ask for, and they do not expect mixtures instead of the genuine article. In each case the defendant must pay 20s. and 12s. costs.

### GETTING AT THE FOUNTAIN HEAD.

At Derby, on July 17, Messrs. Taylor and Lunt, of 1, London-street, Derby, trading as the United Service Stores, were summoned by Captain Sandys, one of the county inspectors under the Food and Drugs Act, for selling 10lbs. of margarine which was not duly branded according to law.—Mr. R. S. Clifford appeared for the prosecution and Mr. Livesey appeared for the defendants.—Selina Bott said she kept a shop at 24, Clifford-street, Osmaston, amongst other things selling butter. At the beginning of May she ordered 10lbs. of butter from defendants, and received it on May 5. She paid 9d. per lb. for the butter, that being then the market price for farmer's butter. It was wrapped up in plain paper, and the paper was not marked "Margarine." The butter in the invoice was described as "Danish mixture." Capt. Sandys' deputy bought some of this butter on May 11, and she believed she was selling pure butter. She was summoned for selling impure butter, and was fined. There was 85 per cent. of margarine in the mixture. She was ashamed for having sold such stuff.—Emily Southall said she assisted in the shop, and when the butter from the defendant was unwrapped the paper was not marked margarine.—Captain Sandys deposed to receiving the certificate of the County Analyst, Mr. John White, F.I.C., which stated that at least 85 per cent. of the fat present was foreign to butter.—The defence suggested doubt as to the identity of the butter sent from the defendant's stores. If any offence had been committed it was technical. It was the custom of the defendants always to place notices along with the margarine.—Joseph Herrod, who sent out the margarine, was called as a witness for the defence.—The magistrates thought that it was a very bad case, and fined the defendants £10 and costs, in all £11 4s. 6d.

### BUTTER.

At Basingstoke Petty Sessions, Mr. J. H. Baker, grocer and provision merchant, of Church-street, was summoned for selling margarine as salt butter. Mr. Wills Chandler appeared for the defendant and pleaded not guilty. The evidence for the prosecution showed that on June 16 Sergt. Squibb, of the Hants Constabulary, sent a little boy named Arthur Pink to the defendant's shop for a pound of salt butter at 1s. The boy was served by a shopman named Stevens. He then called in the Sergeant, who was outside, and who informed Stevens that the butter had been purchased for the purpose of sending a sample to the public analyst. Stevens said "I didn't know you wanted it for that. You didn't purchase it." The Sergeant replied that that made no difference, and asked Stevens if he would accept an offer to divide the substance into three parts, one of which he might retain himself. Stevens said, "I don't know; I must see Mrs. Baker." He left the shop and came back with Mrs. Baker. The sample was divided into three parts, one of which was sent to the public analyst (Dr. A. Angell), who reported that in his opinion the substance was margarine and contained only a trace of butter.—Mr. Wills Chandler, in defence, admitted that the substance sold was margarine, being of a sort which was well known as *Le Dansk*. Early on the morning of June 16, before the shop was opened, the defendant left home to go to London. In the defendant's absence, his shopman, Stevens, who had been with him about a month, was foolish enough to sell this quantity of margarine for salt butter. Mr. Wills Chandler contended the defendant was not, under the circumstances, responsible for what Stevens did, and quoted a number of cases which had gone to the Superior Court to support this argument. Whether the master was liable depended upon whether he had guilty knowledge, and could they assume of any stretch of ima-

gination that Mr. Baker had guilty knowledge of margarine being sold for butter in his shop when he was 50 miles away? Mr. Kingdon: Are you going to prove that Stevens had instructions not to sell margarine? Mr. Wills Chandler: Margarine is there for sale to the people who ask for it. Mr. Kingdon: The question is whether he had instructions not to sell it as butter. Mr. Wills Chandler: Are you in the habit, when you go away in the morning, of telling your servants not to make fools of themselves? There was undoubtedly salt butter on the premises which he ought to have supplied. In the course of further argument it was stated that an offence had been committed under the Margarine Act by reason of the substance not being marked as such. Mr. Wills Chandler said if the defendant had been summoned under the Margarine Act he should have shown that there was an express provision that the defendant was not responsible for what took place in his absence. He challenged the prosecution to produce a case in which a master had been convicted under such circumstances. He then called the defendant, who said he was in London at the time, and was away from home three days. There were three classes of butter in the shop—fresh butter, salt butter, and margarine—which were constantly sold in his shop as well as other shops. Stevens had no instructions to sell margarine when salt butter was asked for. The county authorities had frequently taken samples of butter, coffee, etc., at his shop and he had never had any complaint before this. Sergt. Squibb said there was no salt butter in the shop. It had to be fetched from the back. Defendant: All our butter is kept in the cellar during this hot weather.—The Bench convicted, and imposed a penalty of £1 15s., including costs.

### DRUGS.

At Chertsey Petty Sessions, William B. Lucas, grocer, of Byfleet, was summoned for selling a quantity of tincture of rhubarb, which was 38 per cent. deficient in proof spirit.—Mr. F. Cliffe, inspector under the Food and Drugs Act, prosecuted.—A lad named Charles Bullen spoke to purchasing four ounces of tincture of rhubarb, for which he paid 1s. 4d., and to handing it to Mr. Cliffe.—In answer to the defendant Bullen said the assistant served him.—Mr. Cliffe said when he received the bottle from the last witness he returned to the shop, where he saw defendant, and told him the tincture of rhubarb was to be analysed, offering to leave part of it with him. The offer was accepted, and a part left with him. Another part was sent to the public analyst, who certified that the tincture contained no saffron, a constituent which it should contain, and was deficient to the extent of 38 per cent. of proof spirit.—Defendant said his defence was that he sold it as he bought it. He was ignorant that it should contain any saffron at all, let alone a certain quantity.—Defendant was fined £2 including costs.

### COFFEE AND THE GENTLE ART OF WRAPPING AND DEFENDING.

At Worship-street, on July 21, Frederick Mean, grocer, of 217, Hoxton-street, Shoreditch, was prosecuted for selling coffee adulterated with chicory.—Mr. Beck, solicitor, defended.—The certificate showed 40 per cent. chicory, but the defence was that the article was sold in paper plainly marked that it was "sold as a mixture of chicory and coffee." The sanitary inspector sent an assistant into the shop to make the purchase; then entered and received the article before the assistant left the shop. The paper in which the "coffee" was sold was, with others like it, handed to the magistrate. The sanitary inspector said he contended that there was no disclosure, as the words on the paper were, he thought, partly hidden.—The solicitor handed up a packet similarly done up, and one of the wrapper, and invited the sanitary inspector to try and wrap up the packet so as to hide any of the words.—The sanitary inspector said he was not a grocer's assistant.—Mr. Beck: But you are a man of sense.—Mr. Quelch: Oh, yes, I have sense enough.—Mr. Beck: I challenge you to wrap up that packet so as to prevent any of the words on the paper being seen.—Mr. Quelch: I do not understand it, I was not brought up to it.—Mr. Beck: Don't be rude and noisy; be respectful to the Court. You are a public official.—Mr. Cluer, who had meanwhile been essaying to enclose the packet of coffee in one of the wrappers, here admitted that he could not succeed in covering any of the words of the statutory notice, and said he thought the defence was established.—Mr. Beck said he should carry his case further, and prove that a verbal notice was also given. He asked the sanitary inspector if his case was closed.—Mr. Quelch: Yes,



unless you want to ask me any more questions.—Mr. Beck: Again, I tell you, do not be impertinent; I think you are not even respectful to the Court.—Mr. Cluer: Never mind, it will not affect the decision, and I shall have more of it to put up with than you will.—Mr. Beck proceeded with his defence, and called one of the shopmen, who said he told the purchaser it was coffee and “Chick.”—Mr. Cluer: And was the paper wrapping the same as this packet?—The witness said it was.—Mr. Cluer: It is quite clear and settles the case.—The Sanitary Inspector (seated at the solicitors’ table): I say there was no disclosure.—Mr. Cluer: The words on the paper are sufficient.—Mr. Quelch (still seated): But they couldn’t be seen.—Mr. Cluer: They could not be hidden, and you will be good enough to hold your tongue, or leave the Court. If you have any argument I am bound to listen to it, but I will not allow you to sit there disputing with me after I have given my decision. The case is dismissed, with three guineas costs to the defence.

#### ADULTERATION IN LINCOLN.

At Lincoln, on July 23, the Lincoln Dairy Company were summoned for selling to Inspector Bradley a quantity of milk deficient in cream, or fatty matter, to the extent of 20 per cent. Mr. H. K. Hebb, Deputy Town Clerk, prosecuted, and Mr. Porter defended. Before taking any evidence, Mr. Porter said that he was satisfied that a technical offence had been committed, and he would plead guilty. Inspector Bradley, appointed under the Food and Drugs Act, stated that on June 25 he bought some milk offered for sale by the defendant company. Witness divided what he bought, and took some of it to Dr. Charles Harrison, the public analyst, the same evening. The analyst’s report was to the effect that 2·22 per cent. were solids fat, and 9 per cent. solids not fat, making 11·22 per cent. total solids. He was of opinion that the sample was deficient of fat to the extent of not less than 20 per cent., and no change had taken place in the sample. The inspector further stated that he bought the milk in Chelmsford-street. He had taken samples from the company five times since 1886, and all the others had been found all right. He took two samples that day, and the one in the morning was wrong and in the evening right. Police-Constable Vesey, the inspector’s assistant, spoke to serving the summons on Childs, the Company’s manager. Childs told him that the sample in question was milk which had been standing all night, and which had been creamed for a customer. Mr. Porter said that that being the evidence he could not contest the fact that an offence under the Act had been committed, but he thought there had been only a technical one, and one for which the gentlemen of the company were not personally liable. They did not seek to evade what had been done, as, of course, they were liable for the acts of their servants. The man Childs’s action was distinctly in violation and contravention of his orders.—Ann Townhill, of 22, Spencer-street, was summoned for a similar offence, the deficiency in this case being 14 per cent.—Wm. Hebb, of 2, Spencer-street, was also summoned for the offence, with a deficiency of 12 per cent.—The Bench, after a short retirement, decided to convict. A fine of 10s. was imposed in each case, and costs.

#### ISLE OF WIGHT C.C. AND THE SALE OF FOOD AND DRUGS ACT, 1875.

Mr. OTTO HEHNER, public analyst, makes the following report:—“I have analysed during the past quarter 25 samples under the Sale of Food and Drugs Acts, all submitted to me by your inspectors under the Acts. These samples were—milk 9, butter 8, coffee 8; total 25. I have much satisfaction in reporting that the whole of the samples of milk and of butter were perfectly genuine. Of the eight samples of coffee only one was adulterated, it containing a small percentage (5) of chicory. As on many previous occasions, I am, therefore, in a position to report that the food supplied to the inhabitants of the island is in a highly satisfactory state as regards freedom from adulteration.”

In regard to the inquiry made at the last quarterly meeting of the County Council with reference to the administration by the police of the Food and Drugs Act, the Chief Constable has specially reported that the arrangement is for the officer in one division to take samples in another division. A list of the samples taken since 1891 is given below, which includes the articles mentioned at the meeting of the County Council. Samples of beer have been taken, but by the advice of the public analyst beer is now excluded from the articles submitted to him. We are informed that samples have been taken from leading tradesmen and firms,

as well as from small shops. The establishments of fifteen leading firms have been visited at Newport alone since 1891. Goods at small shops, particularly drugs, are more likely to deteriorate by keeping than in the larger establishments, where sales are much quicker. The Chief Constable has on more than one occasion conferred with the public analyst, Mr. Otto Hehner, on procedure and class of samples to be taken, and they frequently corresponded on the subject.

Samples of food and drugs taken by the Police, 1891 to 1896.—Tea, coffee, cocoa, milk, butter, bread, marmalade, arrowroot, tapioca, mixed sweets, honey, olive oil, lard, vinegar, mustard, pepper, brandy, gin, rum, whisky, beer, ginger beer. Drugs.—Laudanum, sal volatile, magnesia, quinine, Gregory powder, mercurial ointment, ipecacuanha, oil of juniper, rhubarb, Seidlitz powder.

#### DORSET BUTTER OR DORSET MIXTURE?

LOUISA CLARKE, 263, Frederick-road, was summoned at the Aston Police Court, on July 27, for selling half-a-pound of “butter” containing 75 per cent. of foreign fat; and Bullard Felce, 96, Whitehead-road, was summoned for selling the substance to Mrs. Clarke as butter, under false pretences.—Mr. B. Bolt, Inspector under the Food and Drugs Act, visited Mrs. Clarke’s shop on the 2nd inst. and purchased as butter a substance which proved on analysis to be adulterated to the extent stated.—Defendant said she bought it from Mr. Felce as Dorset butter, and produced an invoice, which read “3lb. Dor. at 9½d. per lb.”—Mr. Bolt said that on July 3 he visited Felce’s premises and took a sample of the article supplied to Mrs. Clarke. Felce afterwards called at his office and said he was very sorry that what he sold Mrs. Clarke as Dorset butter was margarine.—Cross-examined by defendant, Mr. Bolt said Felce explained that the letters Dor. meant Dorset.—Defendant: Did I say if the line had been filled up it would have been “Dorset mixture”?—No.—Defendant: What did I say?—Bolt: You said if completed the word would be Dorset. You said nothing about Dorset Mixture.—Defendant elected to give evidence, and in answer to Mr. Rowlands (Magistrates’ Clerk), said he sold Mrs. Clarke 3lb. of Dorset mixture.—Mrs. Rowlands: What did she ask for?—Defendant replied that she asked for 3lb. of butter, but he explained that what he was selling her was Dorset mixture, at 9s. 6d. per dozen, which was the best he could give her. It was a mixture of Dorset butter and fat.—Mrs. Clarke denied that defendant said anything about it being Dorset mixture, and Mr. Bolt said he had never in all his experience known an article so described.—Mr. Hill said the case against Mrs. Clarke would be dismissed, but the magistrates regarded the case against Felce as a very serious one, and he would be fined £10 and costs or a month’s imprisonment.

#### TINNED SALMON: FATAL POISONING CASE AT BLACKPOOL.

A VERDICT of “Death from misadventure, the result of poisoning by eating tinned salmon,” was returned at an inquest conducted by Mr. J. Parker, coroner, at the Blackpool Police Station on July 23, on the body of Dora Elizabeth Reading, (20), of 81, Bath-road, Walsall, Staffordshire. Deceased, accompanied by her sister, was on a visit to the town, and on the way to their lodgings on Saturday they purchased a tin of salmon, a tin of pineapple, and other groceries at a well-known establishment in Church-street, Blackpool. They partook of the salmon for dinner, and again at supper, while at tea they ate a portion of the preserved pineapple. Early on Sunday morning deceased was seized with acute diarrhoea and violent sickness, which continued with more or less severity, and, notwithstanding the administration of a diarrhoea mixture, obtained at a chemist’s, until Monday, when Dr. Lawton was called in. He prescribed for her, and at night she appeared much better; the alarming symptoms recurring early on Tuesday morning, two medical men were summoned, but the girl died before their arrival. In the meantime the deceased’s sister had been similarly suffering, though not to the same extent, as she had not partaken so liberally of the salmon.

Dr. Lawton attributed death to irritant poisoning.—In reply to the Coroner and jury, he said such cases were not uncommon. The poison was formed by the decomposition of the fish, caused by a defect in the can, which admitted air. Such flaws could not be detected or guarded against, and one might have a thousand tins and not find a bad one. The pineapple and salmon would not, in blending in the stomach, create a poison. To detect the presence of the



poison in the salmon required a chemical examination, and an ordinary person might eat it without noticing it.

The Coroner thought nothing could be said. It was one of the risks they ran when partaking of this sort of food, which they all ate at one time or another.

### SPIRITS.

At Barnsley, on July 22, William Swift, landlord of the Horse Shoe Inn, Brierley, was charged at the instance of Mr. John Henry Bundy, County Council inspector, under the Food and Drugs Act, with having sold adulterated gin and whisky on June 12. The county analyst certified that the gin was adulterated with water to the extent of 63 per cent.—Defendant said he was ill at the time the inspector called.—A fine of 5s. and costs was imposed for each offence.

### POISON IN TINNED AND PRESERVED MEATS.

SIR CHARLES A. CAMERON, Dublin, contributed a short paper, at the recent meeting of the "Smitheries" at Glasgow, on poisoning by rancid butter and unsound meat. He said that in April, 1873, he investigated the cause of the death of a little girl, and came to the conclusion that it was due to the use of highly rancid butter. Several persons who had partaken of the same butter were soon after its ingestion attacked by severe vomiting and diarrhoea. One of them said that he felt the butter returning up his throat. He had recorded this case in the *Dublin Journal of Medical Science*, June, 1873. He had now to record a somewhat similar case. A family of six persons—two adults and four children—became very ill after a very simple meal. They complained of the butter and attributed their illness to it, suspecting that it contained poison. A small portion of the butter was submitted to him for examination. He found it to be extremely rancid. It contained ptomaines in decided quantity. Butter when rancid, however slightly, appeared to contain ptomaines. He compared several samples of butter all more or less rancid with the specimen of butter supposed to have caused the illness of the six persons; the amount of ptomaines was very much greater in the butter. In May last he was called upon to investigate the cause of the death of two children. A man, his wife, and two children had dined off potatoes and corned beef. They were soon after seized with vomiting and purging—much more severe in the case of the children than the adults. The next day one of the children died, and the second child expired on the following day. The beef, which was of foreign origin and had been frozen for a couple of months, had a high odour. When he examined it it was in a decomposing state, and had a most offensive odour. Examined in the usual way for ptomaines, the clearest evidence of their presence in abundance was obtained.

Dr. Sydney, Marsden, Birkenhead, desired some information as to the action of ptomaines in tinned meats.

Dr. Littlejohn, Edinburgh, declared that tinned meat should certainly not be eaten twenty-four hours after being opened, but disposed of at once. It was liable to the action of ptomaines if kept any time after exposure to the air.

Dr. J. C. Thresh, Essex, remarked that the occurrence of ptomaines in the food from young animals—lamb and veal—and especially when potted, would lead one to suppose that that food, rich as it was in gelatine, was a very fitting ground for the development of bacteria.

Sir C. A. Cameron, Dublin, remarked that it was very useful to know that foreign meat that had been frozen for several months was very liable to decompose very rapidly. If it were not eaten almost immediately after purchase it was very apt to go into decomposition. When meat became a little tainted, butchers had a nasty practice of putting it into pickle, and that was the most dangerous of all. He had met with a great number of cases of poisoning in this way that he had never published. Anyone who did not buy the fresh meat before getting it pickled, but bought the promiscuous corned meat of the butcher, was running a great risk. He was perfectly satisfied that an enormous amount of disease was produced by the use of corned meat.

The Chairman remarked that what the previous speaker said regarding the practice of butchers pickling tainted meat was certainly true. Restaurant keepers, also, if they saw a beefsteak, cut from the shoulder, was not quite so nice and sweet as it might be were apt to serve it as curried steak.

### THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 359.)

Mr. Schütte himself and one of the other members of the Commission—Sanders, from Hamburg—have developed from the Standard Oil Trust into the German-American Petroleum Company. The Standard Oil Company has then taken care (as with the American Petroleum Company acting in Antwerp, Rotterdam, and Amsterdam) to keep in their own hands 50 to 51 per cent. of the shares entitling to vote. Secondly, it must be considered that it is the interest of the Oil Trust, and also was in 1880, to keep the test as low as possible in order to dispose of their naphtha, while, on the other hand, for the benefit of the consumer, a high test is necessary. The "close connection" has to combine therefore diametrically-opposed interests. With these by-thoughts may the introductory sentence be subscribed to by everybody.

And now the two most important remarks in Schütte's speech. It runs in the beginning: "If people demanded a higher test than 110° F. American (about 68° F., Abel test) then a further considerable raising of price would be the necessary consequence. In America 120° test oil (73° F., Abel test) at present paid 1 cent. per American gallon higher than 110° test oil." As now Germany consumes in round numbers 5,000,000 cwt. (in 1880), that would correspond to an additional annual expenditure of 4,000,000 M. This communication is in its generality simply false. That there are oils of 110° and 120° F. (American test) which show a difference of price of one per cent. per gallon is willingly admitted, although it is questionable whether this difference is indeed real. The "Materials," page 17, give for two different brands, Royal Daylight of 120° F. and Standard of 110° F., prices of respectively 21 and 19 pfennig per litre, therefore 10 per cent. difference. But that is not exactly the question. The question is, What is the difference of price for Standard Oil No. 1, of 110° F., when manufactured of 120° F. American test (67° F. and 73° Abel, therefore with a difference which in reality is put too great, at 6° F., Abel)? The answer is given, firstly, from the above-mentioned experiments of the Board of Health with petroleum, in which oil was purposely mixed with naphtha; further, out of the fractionating experiments mentioned by me, which prove that the Standard Oil, No. 1, must be deprived of about 3.5 vol. per cent. of naphtha, in order to raise the test by 12.6° F. to 14.4° F.; and finally, from the Appendix placed before the Reichstag and signed by Dr. Struck in July, 1881, page 21. In the table there given is shown that the addition of only 1 per cent. (in vol., therefore less in weight) Gasolin (specific weight 0.6744, with initial boiling point is not mentioned) lowers the flash point of 79.7° F. (Abel) by more than 8 per cent. C. (=14° F.). That these statements do not agree with each other arises from the different volatility of the naphtha. (The naphtha added purposely by the Board of Health has evidently a greater volatility than that distilled by me from petroleum, and therefore lowers the flash point in a higher degree.) Also daily experience teaches that the oils introduced in Amsterdam (and therefore also in Germany) show a difference in the test of 5.4° F. without difference of price at all. While Schütte came to the conclusion from the information given him that a raising of test from 110° F. American to 120° F. (at most 5° F., Abel), represents a raising of price of about 6 per cent., and would cost Germany every year (in 1880) 4,000,000 M., it shows that the raising of price either need not take place at all or needs to amount at most at 1 per cent.

(To be continued.)



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## Food and Sanitation.

SATURDAY, AUGUST 8TH, 1896.

### HOW EVIDENCE IS "COOKED" FOR SELECT COMMITTEES.

THE Select Committee of the House of Commons, on petroleum, has adjourned for the session, after hearing some of the most "Expert Witnesses" who have ever faced a House of Commons' Committee. If there be one fact that is notorious it is that out of every one hundred barrels of various kinds of products from the distillation of petroleum, *forty are of an illuminating oil not good enough to be burned in the United States.* This fact was one of the strongest reasons that prompted the appeal of the independent oil refiners to the United

States Inter-State Commerce Commission in 1888, and is clearly demonstrated by one of the ablest American writers. Mr. H. Demarest Lloyd, in his work on the rise of the petroleum monopoly, said "The refiners stated that this 40 per cent. of refuse oil must be sold in Europe or not sold at all; and a manufacturer who cannot get rid of 40 per cent. of his product must give up manufacturing." This was at the time when Rockefeller and his gang had got the railway companies to refuse to carry the oil of independent firms to the ports for shipment. It suits Rockefeller's purpose to-day that this should be denied, and as Rockefeller has amassed, by the vilest methods, monopolies that produce an income of over thirty million dollars per year, he and his gang can well afford to pay heavily for "Experts" who will "Expert" vigorously. If there be one truth clear from this statement of the independent oil refiners, in 1888, to the Inter-State Commerce Commission, it is that this country is the dumping ground for 40 per cent. of refuse American oils which are not allowed to be used in America; or, to put the fact in plainer English, the American Oil gang must send us this murderous low flash-point refuse, or lose forty per cent. of their product. We have, however, the spectacle of witnesses having the audacity to make statements like the following. The first is that scientific "expert," Professor Chandler, to whom Mr. Mundella said:—"It has been stated by previous witnesses before this Committee that England is the 'dumping ground' for oil of a dangerous character, which under no circumstances would be permitted to be used in the United States. Do you agree with that statement?—I know that this statement is not true."

Another "expert," a Mr. Babcock, is manager of an oil works in America, and to him a member of the Committee said:—"We have had repeated statements that Americans manufacture oil for export which they are not allowed to use at home—that, in fact, they make Great Britain the dumping ground for such manufactures. Is there any truth in that statement?—I have hardly been able to control my laughter at such statements."

In the face of the facts above given, what can be said of these answers? They are got up solely, as the rest of the American evidence is, to deceive the Select Committee, and hocus it into permitting Rockefeller and his confederates to continue dumping their forty per cent. of refuse oils into this country and carrying fire and roasting alive of human beings through the length and breadth of the Kingdom. How horrible are the crimes and infamies "experts" can be found defending if the fee is, like Pooh-Bah's insult, heavy enough! It is Rockefeller's cynical boast that every American judge, congressman, and senator has his price, and that the members of our House of Commons have theirs. We shall see if the American "Fire-King" will succeed in preserving his murderous monopoly, and continue to cause more *auto-da-fés* than Torquemada did. Rockefeller is pious, and preaches at times in New York. His Spanish prototype, we remember, was also pious, and given to preaching.

### INDIA'S IMPERTINENT IMITATION OF MANCHESTER.

IN the days when the late Right Hon. John Bright waxed very indignant over any officious interference with adulteration, and defended it as "a form of commerce," an astute admirer of the "Honest John" of that day discovered that calico made of a few threads per inch, and carefully coated with china clay, was cheaper to produce than unadulterated calico. It also helped to civilise the Indian or nigger who bought and wore it by white-washing him the first time it received a shower of rain. Kipling laughs at the thought of India becoming civilised and adopting Western methods, but he doesn't know everything, does Rudyard K. The Rangoon Chamber of Commerce, in its last annual



report, has a few remarks to make which prove that at last civilisation on the lines of "Honest John" has got a firm footing in Surat.

It appears that until recently there has been a great demand in the Burmese market for the silk wares manufactured at Surat. But during the last two or three years that demand has been steadily decreasing, and the silk weavers of the old presidency town have consequently complained so loudly that their wailings have reached the Rangoon Chamber of Commerce, which has accordingly instituted an inquiry. It was believed that the competition of inferior goods, "made in Germany," would be found at the bottom of the falling off in trade, but such has not proved to be the case. The increasing poverty of the lower class Burmese has induced them to substitute to a considerable extent cotton for silk in their wearing apparel; but this is not the main cause of the decrease in the demand for Surat cloths. That cause is to be found in the conduct of the weavers themselves. They have lately taken to reducing the quantity of the silk in their manufactures, making up the deficiency in weight by the use of such substances as sugar, salt, flour, etc. Naturally, textiles thus compounded neither wear nor wash well, and accordingly the once great popularity of Surat silk goods in Burmah has almost disappeared.

Impertinent imitations such as this cannot be tolerated, and if they spread it will be necessary to teach India a lesson in commercial morality.

#### M.P.'S ON THE MAKE, AND OUR FOOD SUPPLY.

WE wouldn't say a word in favour of the silly twaddle or swindling schemes our Rt. Hon. and Honourable friends in Parliament usually occupy themselves with; and the mean squabbles of the Balfours, Harcourts, or Chamberlains, equally with the superior ones of Salisbury or Rosebery, have no interest for us because we are satiatedly satisfied that none of these fervent gentlemen care a rap about anything but their own selves, and that each is "on the make." Our Rt. Hon. and Hon. friends of the Unionist party were "on the make" in the meeting they held on July 28, but as their "make" happens to coincide with a belief we have often expressed, we don't mind saying a good word for "My Rt. Hon. and Hon." humbugs on one question at least.

Sir John Dorington presided over a largely attended meeting of Unionist Members for agricultural constituencies. Mr. Long was present as Minister for Agriculture. On the motion of Mr. Yerburch, seconded by Colonel Milward, it was resolved to urge the Government to appoint a Committee of naval, military, commercial, and agricultural experts to consider in what way the grave danger to which the country is exposed by its increased dependence upon sea-borne supplies of food may best be obviated.

Now, we know very well what my Rt. Hon. friends' little game is here. It is to bleed, under the guise of a regard for the safety of the United Kingdom, the urban taxpayers for the benefit of distressed landlords like His Grace of Westminster, the Rt. Hon. Henry Chaplin, and a host of other deserving poor who, by reason of agricultural distress, have become in imminent danger of having to seek the shelter of the workhouse. To prevent this calamity these deserving poor have voted themselves a relief of two millions per year out of the rich, common taxpayer's pocket, and they want a bit more now that we have a Government of persons who thief in a decidedly more gentlemanly fashion than did their thieving predecessors. But, although we recognise this, common sense compels us to look at the matter as did a famous theatrical manager, whose friend informed him that the manager's pay-box man was the possessor of a row of freehold houses, and, knowing they must have come out of the "takings," besought the manager to invest his cashier with the

"order of the sack." "I'm not such a fool," was the manager's answer. "He has got his 'row,' and may be content, but if I get another cashier he'll probably want his row of houses also." To come to the moral of this, we must realise the very serious fact that we are absolutely dependent upon foreign countries for our food supplies, and that any moderately powerful combination of foreign powers could, within a few weeks, force famine and pestilence upon millions of our inhabitants. A partial blockade of our ports, easily to be done by even one of the great Continental powers, would, to put it plainly, spell famine. Common sense, therefore, leads us to the conclusion that we would rather our Right Hon. Friends "on the make" make a bit by their pseudo patriotism, than that we should, to use a Boyle Rocheism, "wake up some fine morning to find all our heads cut off and staring us in the face," or, that we should have a practical demonstration of the truth that, however brave our national defenders may be, they can't fight on empty stomachs. If, therefore, we say a good word for this latest scheme of the distressed landowner, we hope no one will accuse us of sympathising with the greed for grain that thrills every fibre of those who have trotted out this patriotic, stalking horse. They are keen for "plunder," but, then, it will benefit the public if they force this question into prominence. They have, therefore, this our candid and whole-souled support.

#### THE EFFECT OF FEEDING ON MILK-YIELDS.

AN experiment in the feeding of milch cows, conducted recently at the Midland Dairy Institute, is interesting concerning the extent to which the milk-yield of the cow is influenced by the food she consumes. The experiment was directed to test the influence of varying amounts of oil and nitrogenous matter on the quantity and composition of the milk yielded. Three lots of five cows each were set apart for the trial. All received in common 2½ lbs. of bran, 6 lbs. of hay, 10 lbs. of chaff (steamed), and 50 lbs. of roots. Lot A, in addition, were given 2½ lbs. of linseed cake No. 1 (containing 6.83 per cent. of oil and 39.44 of albuminoids), 3 lb. of bean meal, and 2 lb. of mixed oat and wheat meal. Lot B's additional allowance consisted of 4½ lbs. of linseed cake No. 2 (containing 16.83 per cent. of oil and 24.69 of albuminoids), and 3 lbs. of bean meal; while Lot C, in addition to the common foods, were fed with 4½ lbs. of linseed cake No. 1 and 3 lb. of bean meal. The steamed chaff was mixed with meal and bran, the roots, hay and cake being fed separately. The chief points to be noted concerning the feeding, as shown in a complete analysis of the rations, are that the dry matter fed per day is similar for each lot of cows, the amount of nitrogenous substance fed to Lot C is greater than that fed to either of the other lots, the amount of oil fed to Lot B is greater than that fed to the others, and that the albuminoid ratios of Lots A and B are nearly the same, that of C being much closer. The milk of the different animals, of course, was subjected to the same searching investigations and manipulations. The results favour the view that the quality as well as the quantity of the milk is affected by the ration the cow receives, although to only a very slight extent. From the results obtained at the Nottingham station it appears that, as regards actual quantity of milk, the high albuminoid ration, as given to Lot C, has the greatest influence. As regards quality (fat contained), however, the large quantity of oil fed to Lot B produces the most marked effect, which, although not very pronounced, is intelligibly consistent throughout. Lot C maintained their milk-yielding standard better than the others, while the live weight records testify to the value of the ration fed to Lot B in maintaining the condition of the body. Lot A lost most heavily in weight during the experiment.



## CONDENSED MILK LABELLING.

THE late Lord Chief Justice, although dead, still exacts his tribute of the children of England. His last victim was an infant of the name of Roberts, whose inquest engaged the attention of Dr. Danford Thomas, on August 3rd.—Mary Roberts, the mother of the child, which was seven months old, said she had fed it from birth on condensed milk.—The Coroner: I suppose you don't know what the quality of the milk was?—Witness: It was the ordinary condensed milk.—The Coroner: Yes; but it is a pity that it is not more generally known that a large number of the cheap tins of milk which are sold have in very small letters at the bottom of the label, "This milk is not guaranteed pure, the cream having been extracted." This milk might be good for flavouring a cup of tea, but absolutely useless for the nursery.—A Juror: Then vendors who impose upon the public in that way ought to be prosecuted.—The Coroner: They cannot be, unfortunately, as by putting the notice at the bottom of the label they escape all charge of fraud.—The mother went on to say that the child got weaker and weaker and died on Friday morning last.—Medical evidence showed that death was due to inanition from malnutrition or non-assimilation of food.—The jury returned a verdict in accordance with the medical evidence.

Five days before this object lesson was made public Mr. A. H. Allen, the well-known public analyst, dealt with this question at the British Pharmaceutical Conference at Liverpool. Mr. Allen divided that article into three classes—first, the unsweetened condensed milks, mixed only with a small quantity of preservative; second, the sweetened milks; and third the milks which were specially treated in order to make the compound approximate to human milk. Besides these varieties which were sold for domestic use there was an Italian brand sold to milkmen for diluting their new milk instead of applying to the pump (laughter). Generally speaking, milk when condensed contained about three times the solid matter of milk in its ordinary state. In Swiss milk of the best qualities the solids were 36 or 37 per cent., but it has been found that in condensation some of the fat of rich milk was liable to be lost by evaporation. The difficulty, however, had now been overcome, and full cream milks could be obtained in condensed form. Good cow's milk concentrated to one-third of its original bulk would contain about 11.2 per cent. of fat, 10.5 of proteids, 14.5 of milk sugar, and 2.1 per cent. of ash. In the sweetened condensed milks, however, the added cane sugar was equal to the total remaining solids, and was as high as 36 to 40 per cent. of the whole preparation. In spite of that fact the statement appeared on some labels "Only a small quantity of pure cane sugar added." One serious consequence arising from the addition of so much sugar was that the milk was unsuitable for ordinary purposes, unless mixed with a proportion of water which diluted it far beyond the bulk of milk before concentration. Some of the labels also bore a statement that if mixed with from three to five volumes of water the milk might be used as a substitute for cream. It certainly, if so used, would have the appearance of cream, but would contain less fat than was present in ordinary uncondensed new milk, the minimum of fat in true cream being 25 per cent. Two years since many condensed milks were made from partially skimmed milk. These had now largely disappeared, but articles were still met with made from milk from which all trace of cream had been extracted with a completeness only possible by the employment of a centrifugal separator. The character of commercial brands of condensed milk was liable to change, but if the quality of a particular brand was challenged certain manufacturers simply rechristened the product and issued the old tins with new labels. Sweetened condensed milk was, in

his opinion, by no means an ideal food for infants. Even the unsweetened brands possessed the disadvantage of readily curdling, and of containing less milk sugar and a larger proportion of chalks than in normal human milk. To meet these defects "humanised condensed milk" was being manufactured, and gave a much better imitation than could be obtained from sweetened condensed milk. There was, however, a highly reprehensible statement on the labels of many brands that for infants six to fourteen parts of water should be added to every part of milk. If literally followed, that direction yielded a fluid containing only one-third of the solids of ordinary milk, and about one-fourth of the fat. Notwithstanding, some labels stated that nurses were disposed to add too little water. He could only say that an attempt to feed a child according to these directions could only have one of two results—either the child would be half-starved or it would have to imbibe so large a quantity of fluid as could not fail to have a serious effect on its system. Unfortunately, the flagrant cases of misrepresentation which disgraced the condensed milk trade were not punishable under the Food and Drugs Act.

This is the present position of the question, and it is about as sorry a one as could well be conceived. It might well serve as an awful warning to our judges if the bulk of them were not so mentally blind, halt, and lame that warnings are lost on them. It shows how a man, well-meaning enough, may, by a stupid judgment, be worse even than Herod, for Herod's slaughter of the innocents did not go on from day to day. A more melancholy example of the truth that "The evil men do in their lives lives after them," could not easier be found than the crime of the late Lord Coleridge against infant life. For years we were as one crying in the wilderness upon this question. To-day a House of Commons Committee supports our contention, and that this evil will, in human probability, soon be remedied is one useful public work for which we can honestly take credit. We hope we shall not be as long in making impossible the roastings alive of our people for the profit of the American oil villains.

## THE AGITATION IN FAVOUR OF MARGARINE.

MR. C. F. WATERS, the hon. secretary of the Margarine Defence Association, writes, under date the 25th ult., on behalf of the association, referring to the fact that the report of the House of Commons Select Committee appointed to inquire into the working of the Sale of Food and Drugs Act has now been published, and drawing special attention to two of the recommendations contained in it relating to restrictions on margarine, the first prohibiting the colouring of margarine, and the second prohibiting the mixing of butter with margarine. It is contended that these two clauses are directly aimed at the very existence of the margarine trade, the Acts already in existence being admittedly capable of dealing with the prevention of fraud if properly carried out. That the administration of the Acts in question is faulty was admitted by Mr. A. J. Balfour, in answer to a deputation of agriculturists who recently waited upon him. He then stated that the subject of food adulteration was one more for administration than legislation, and the association think all unprejudiced persons will agree with him. But the real object of the opponents of margarine is not so much to prevent its fraudulent sale as to kill the margarine industry altogether. Margarine is especially a food for the working classes. It is bought by them at prices ranging from 4d. to 8d. per lb. They cannot afford butter, and are well satisfied with this wholesome substitute. If they cannot pay the price for butter now, how could they, it is asked, be expected to do so if the price were enhanced, as margarine detractors maintain would be the case if the



sale of margarine were stopped? In Germany, the Agricultural party forced a Margarine Bill through the Reichstag containing clauses prohibiting the colouring of margarine, and also its sale in the same shops as butter; but on the Bill coming before the Federal Council on the 14th ult. it was immediately and unanimously rejected. This healthy precedent, combined with the fact that Mr. T. W. Russell, the chairman of the House of Commons Select Committee, and a member of the Government, strenuously opposed the two recommendations referred to, encourages the association in the belief that, when the report is placed before the House next year, the Government will take an early opportunity of disclaiming any intention to pass legislation based on the proposals in question.

#### HOW TO DESERVE SUCCESS.

LORD PLAYFAIR, some years ago, at Glasgow, informed an audience that "Epaminondas, one of the greatest military geniuses that Greece produced, did not refuse the office of 'telearch' at Thebes," though its chief duty was to supervise the cleansing of the streets, and that Plutarch justly commends him. Unfortunately we would have a difficulty in finding our military geniuses to-day willing to do public service when their regular trade is slack. They are more intent on self-advertisement that costs nothing, as witness the "Balaclava Fund," which the Balaclava survivors are still without, because certain friends of man, at other people's expense, were afraid if the poor "heroes" got the money the public had subscribed the heroes might spend it! Lord Playfair has apparently lost none of the spirit he manifested years ago. He is a pioneer in dietetics, and is chairman now of the Bovril Company, and in this capacity was able to announce to shareholders the other day the handsome dividend of 20 per cent., and to announce that there were employes whom they could not reward in that way—he referred to the workpeople, most of whom were women, and who were very faithful and efficient servants. Last year they set aside £1,000 to distribute as bonus among them, and they proposed to do the same this year, and to use it in this way. They proposed to give them three weeks' wages, which they did before; but as the prosperity of the company had been so considerable they were going to give them in addition a fortnight at Margate. They desired to keep up the health and strength of their workpeople, and to make them happy and comfortable; and he was glad to say that the two weeks' holiday at Margate was a great success. Twenty of their hands were away at that time, and they would all come back with increased vigour to continue their work for the company. One or two things had happened since their last meeting, which they would be interested in hearing. One was that Mr. Johnston had been working very zealously to produce in a concentrated form an army ration which would suffice for a man for twenty-four or thirty-six hours. That had been successfully accomplished, and the rations had been used in the Abyssinian campaign, and they were also sending them out to the officers engaged in the Nile expedition. The Government did not seem inclined to let the soldiers have as many of the rations as they would like, because they were rather expensive, but he hoped in time that the army would use them more than they did now. Another noticeable feature of the past year was that the use of Bovril in the hospitals throughout the country was increasing very largely, and that was because the medical profession were beginning to better understand its value.

This is the way to deserve success, and after a long life of sterling public work Lord Playfair has done well to give his knowledge of dietetics to the production of really nourishing foods. None will grudge Bovril its success since it is accompanied by such thoughtful regard for the health of the many engaged in its preparation.

#### WHAT IS MUSTARD?

THERE is a Mr. Phillips in existence who does not need to be told to "Go to Bath," for he is apparently there already, but he might well have been told to hold his tongue about mustard at least, for, had he done so, he would not have made so many stupid statements about that article as he gave utterance to on July 27, at a meeting of the Bath Sanitary Committee. Mr. Gatehouse, the public analyst, reported that a sample of mustard which had been submitted to him by the inspector of nuisances contained the following:—Water, 6.6; fixed oil of mustard, 24.2; cellulose and myrosin, etc., from mustard, 44.2; wheat flour, 25.0. The Chairman said it was another case of adulteration; the substance contained a quarter of wheaten flour. Mr. Phillips: What are the remarks? Mustard is very funny stuff. The Chairman: The analyst said it contains 25 per cent. of flour. If you ask for mustard you don't expect a quarter to be wheaten flour. Mr. Phillips said he must go against the chairman. Mustard could not be taken by itself. There was only one class of men who could eat pure mustard—Durham miners. He knew perfectly well mustard must have flour added to it. In answer to the chairman, Mr. R. A. Moyer (deputy clerk) said it was rather doubtful whether a conviction could be secured under the circumstances. The ordinary mustard sold in commerce was not pure mustard. He suggested that the matter should be referred back. It was agreed that this be done.

For Mr. Phillips' information we may tell him that pure mustard, entirely free from any adulteration with wheaten flour, is on sale in all parts of the Kingdom, and is eaten by all persons of taste and knowledge, and is not confined to Durham miners. Wheaten flour is not necessary in its manufacture, and is used solely because it profits unscrupulous persons to sell it at the price of pure mustard. The firms who manufacture the swindling article manufacture also pure mustard and sell it, and Mr. Phillips, by such ignorant twaddle as he uttered to the Bath Sanitary Committee, only encourages their roguery. We are somewhat surprised that a deputy clerk should make the remarks Mr. R. A. Moyer did. He at least ought to know better, and should at once provide himself with a manual on the Adulteration Acts and a list of the convictions for the sale of mustard containing wheat flour. If he were to study "The Law and Chemistry of Food and Drugs," by Mansfield, Robinson and Cribb, published by F. J. Rebman, 11, Adam-street, Strand, London, he would be able to advise his committee sensibly and reliably on such a question as this.

#### THE FIRST-FRUIT OF THE MIGHTY INTELLECT OF THE LATE MINISTER FOR AGRICULTURE.

IN the House of Commons the other day, Mr. Herbert Lewis asked the President of the Board of Agriculture whether, during the two years in which the Fertilisers and Feeding Stuffs Act, 1893, had been in operation, in nine counties only one analysis had been made, and in twenty-nine counties there had been no analysis; and what steps he proposed to take to prevent the Act from being a dead letter in the counties referred to.

Mr. Long said the facts were as stated in the question. Since the passing of the Act, the Department had addressed various circular letters to the local authorities, calling attention to its provisions, and making various suggestions in regard to its administration. The Department had also issued many thousands of a leaflet explanatory of the procedure to be adopted by buyers who wished to put the Act into force. He would be happy to consider further suggestions, but it must be with the buyers themselves to determine whether they would avail themselves of the machinery for sampling and analysis supplied by the Act.

This is the exact result we foretold when Mr. H.



Gardner (Lord Burghclere) hatched this stupid Act. An Adulteration Act to be useful must be compulsory. We doubt if up to now this Act has even recouped certain analysts the amounts expended in postage and printing to "corner" appointments under it.

## THE ADULTERATION OF FOOD PRODUCTS.

### REPORT OF THE SELECT COMMITTEE.

THE Select Committee appointed to inquire into the working of the Margarine Act, 1887, and the Sale of Food and Drugs Act, 1875, and any Acts amending the same, have presented their report to Parliament. The text of the report extends to 40 pages, and is followed by two pages of summarised recommendations. At the outset the Committee state:—

"While the evidence shows that the law in relation to food adulteration needs amendment in some important points, it is satisfactory to your Committee to have ground for stating that where the Acts have been well administered they have been most beneficial in diminishing adulteration offences. Forms of adulteration which were common, prior to the passing of the Sale of Food and Drugs Act, 1875, such as the introduction of alum into bread, and the colouring of confectionery with poisonous material, have now almost entirely disappeared."

The Committee state that the proportion of adulterated samples is found to diminish as the number of samples relatively to the population increases, and the conclusion is warranted that the greater liability to detection involved in a vigorous administration of the Acts serves to restrict materially the volume of adulteration offences. They hold that an increase of samples should be taken beyond one for every 1,000 of the population in a district; and to spur on local authorities to do their duty they think it desirable that County Councils should be requested to watch the manner in which the local authorities in the county are administering the Act, and should even make a point of taking samples themselves for the purposes of the Act. They would also extend this power to boroughs not county boroughs when there is failure to enforce the law. It is noted that adulteration of food with substances injurious to health has diminished greatly during recent years, and on this a witness has quoted:—"If we are to believe the old inquiries people were poisoned constantly; whereas now, if they are cheated they are not poisoned." With regard to labels on packages, the Committee come to the conclusion that they cannot support the proposal that these should set forth the several components of the mixture as well as the fact of admixture. On the extension of the provisions of law to wholesale dealers the Committee report:—

"It has been proposed that the law should be amended so as to provide for the taking of samples for analysis from wholesale dealers, merchants, manufacturers, and importers. Having regard, however, to the obstacles in the way of such action as above pointed out, it is not easy to suggest a course of action which would be at the same time practical and effective in detecting adulteration on the part of wholesale dealers. Your Committee are disposed to think that the solution of the difficulty may be found in extending the provision as to the giving of warranties by wholesale dealers to retailers, and increasing the facilities whereby legal proceedings may be taken against the former in cases where the retailer proves that the commodities, the purity of which is called in question, are in the same condition as when he obtained them."

On warranty the Committee do not see any valid reason why the precedent of the Margarine Act should not be followed generally, and with some limitations indicated, they hold that invoices and equivalent documents should have the force of warranties in the case of all articles to which the Acts apply. The Committee have reason to believe that a considerable proportion of the imports of food are adulterated. Of 890 samples of butter taken by the Customs 106 were adulterated. They do not recommend that the Customs should have power to detain food imports of all descriptions pending inquiry, but they adopt a suggestion made by Mr. Primrose, chairman of the Board of Customs, who stated "that the Department could without difficulty and with but a slight increase in staff arrange to take samples of all food imports for analysis, the bulk of the consignments being forwarded to their destination in

the usual way. It has been suggested that if this course were taken and the consignee of any commodity the sample of which was found to be adulterated were informed to that effect some advantage might be expected to accrue."

The Committee also state:—

"It has been suggested as not unreasonable that dealers in food who obtain supplies from abroad may properly be asked to show that they have taken measures to secure the supply of unadulterated articles. With this object in view it has been proposed that such dealers should be required to produce to the Customs a guarantee of purity from the foreigner from whom they make their purchases, and should also be called upon to disclose proof that they have endeavoured to prevent breaches of the warranty by causing consignments to be analysed, and refusing to buy the same if they were found to be adulterated. Your committee think these proposals worthy of adoption."

In proceeding to obtain analysis, it is recommended that the sample taken should be divided into four instead of three parts, and one of these given to the wholesale dealer if the retailer pleads warranty by the wholesale dealer. They also urge that the delivery of a portion to the vendor should be compulsory in place of optional. Various suggestions are made as to procedure, and on one point the Committee think defendants should be debarred from pleading warranty—i.e., the cases in which a warranty is given by a foreign manufacturer or dealer, the importer or agent should be held accountable. They urge that local authorities, before legal proceedings are commenced, should see that a substantial *prima facie* cause for complaint exists. On penalties the Committee recommend:—

"After careful consideration of the matter, your Committee have come to the conclusion that the punishments which, as a rule, have been inflicted for offences under the Acts have not been sufficient to render them effective for the purpose for which they were designed. Your Committee therefore recommend that for the second offence under the Sale of Food and Drugs Acts the penalty of £5 be prescribed, and that in respect of the third or subsequent offences under these Acts, and the Margarine Act, 1887, the punishment of imprisonment without the option of a fine, may, at the discretion of the magistrates or court, be inflicted. This recommendation is, however, made subject to the understanding that the proposal of the Committee, referred to in the preceding paragraph, is given effect to."

"As an additional punishment for adulteration offences it has been suggested that offenders should be required to publish at their own expense a notice of their conviction in the public journals of the locality in which their places of business are situated, or otherwise, as may be thought desirable, to give due publicity to the conviction."

The Committee discuss the question of food standards, and come to the conclusion that it would greatly facilitate the working of the laws bearing on adulteration of food, and also serve the interests of traders, if standards or definitions of foods were promulgated by competent authority.

"Your Committee do not desire to pronounce a positive opinion either for or against the expediency of setting up food standards generally, still less do they wish to recommend the adoption of certain standards in regard to particular articles. It appears to them, however, that the necessity for standards is especially felt in the cases of articles where a possible adulterant is a natural constituent of the article. Your Committee think that the question of fixing food standards should receive the consideration of a specially constituted scientific body familiar with questions of analysis and the chemistry of food, and they recommend that such a body should be established."

It is urged that there should be close relations established between the Government Laboratory and the public analysts, the latter being made fully acquainted with the methods of the Laboratory. As to a Court of Reference, it is held that this should take the form of a Standing Departmental Committee appointed by the Board of Trade.

"As to the *personnel* of such a Departmental Committee, your Committee are of opinion that the principal officer of the Government Laboratory at Somerset House should be *ex-officio* a member, and that nominees of the Local Government Board and Board of Agriculture should be included. It would appear advisable that the Committee should comprise one or more analysts of repute, together with representatives of the General Medical Council, the Institute of Chemistry, and the Pharmaceutical Society. Other scientists whose services are available, and whose presence on the Committee may be expected to lend weight to its



decisions, should find places thereon. Representatives of the trading and manufacturing community should also be included."

With regard to public analysts, the Committee are of opinion that their remuneration by a combination of fixed stipend and stated fee is best calculated to secure the services of the most competent men. In some cases the remuneration is quite insignificant, and the Committee think that it should be subject to the approval of the Local Government Board.

Milk is the first food dealt with by the Committee *seriatim*. Various suggestions were made as to a standard, and the following is cited:—

"1. Total solids, 12·6 per cent.; fat, 3·6 per cent. 2. Total solids, 12 per cent.; fat, 3 per cent. 3. Total solids, 11·5 per cent.; fat, 3 per cent. 4. Total solids, 12 per cent.; fat, 3·2 per cent. 5. Fat, 2·75 per cent.; other solids, 8·5 per cent. 6. Fat, 3 per cent. 7. Fat, 2·5 per cent.; other solids, 8·5 per cent."

The Committee were informed that if the solids ever fell below 8·5 per cent. there would be ground for suspecting that the sample had been watered. While not making any recommendation of a milk standard the Committee are of opinion that it would be difficult to over-estimate its importance, and hold that it should engage the attention of the proposed Court of Reference. They remark, however:—

"As the law at present stands, all milk, whatever its composition, which is the produce of a cow, and to which nothing has been added, and from which nothing has been subtracted, must be regarded as pure, and its sale is no offence under the Adulteration Acts. The fixing of a high standard would have the effect of preventing the sale, except as an inferior article, of much milk that fails to reach the standard, but possesses considerable nutritive value, while if a low standard were set up there would be some inducement to the vendors of superior milk to water it down to the standard. The main object of fixing a standard is obviously to secure the supply of milk of fair average quality, and the fixing of a standard which the poorest genuine milk could reach would not accomplish this object."

Quite a number of suggestions on milk are thrown out as the subject of consideration by the Court of Reference. Condensed skimmed milk, it is urged, should have labels printed in large type plainly indicating the quality. With regard to vehicles used by milk dealers the Committee support the view that these should in all cases bear the name and address of the person responsible as master for the sale, and that all milk dealers should be registered with the County Council or local authority.

As to butter the Committee state that in 1877 the percentage of samples found to be adulterated was 13·9; in the next five years, 17·9; in the next five years, 13·4; in 1892, 15·3; 1893, 13·7. But, as in milk, the number of samples analysed is probably not sufficient to afford a true indication of the extent of butter adulteration.

"The form which the adulteration of butter almost invariably takes is that of the addition of margarine, and owing to the scientific knowledge and skill brought to bear in effecting this adulteration it is in many cases difficult of detection. In many cases an excessive percentage of water is also found to be an adulterant. The difficulties experienced in determining whether margarine is present in a sample of so-called butter have been explained to your Committee, and they have been informed that 'the adulterators could take an ordinary butter of good quality and add to that a quantity of foreign fat, and in chemical composition this mixture will correspond with genuine *bona-fide* butter.' There seems reason to believe that if the margarine added does not exceed a certain proportion the adulteration is practically impossible of detection by any method of analysis at present known."

The Committee do not recommend a standard for water in butter, having regard to the constitution of a Court of Reference, but they hold that the weight of evidence was clearly to the effect that any standard for water under 20 per cent. would be unfair to the producers of Irish salt butter. Colouring matter usually employed is not deemed injurious to health, but it is questioned whether in some instances antiseptics used may not be injurious to health. The Committee express no opinion, but think all these questions should be considered by the Court of Reference. As to margarine, the Committee report:—

"Your Committee cannot but feel that the adulteration of butter with margarine, and the fraudulent sale of margarine

for butter are greatly facilitated, in many instances, by the artificial use of ingredients to colour margarine. While your Committee are reluctant to interfere with the manufacture of any edible commodity, they cannot, in the interests of honest trading, arrive at any conclusion other than to recommend the absolute prohibition of the artificial colouring of margarine to resemble or imitate butter. Some witnesses have urged upon your Committee that margarine should be compulsorily coloured pink, green, or red, so as to distinguish it from butter. Your Committee are of opinion that there would be no justification for interference with the margarine trade to this extent. They are not prepared to recommend any restriction in the matter of colouring other than the prohibition of the artificial means of colouring margarine to imitate butter."

The Committee recommend, as a check upon dishonest dealing, that margarine for the market should be packed in a prescribed form of box or receptacle, and that while it is exposed for sale should remain in such receptacle. Such regulations are enforced in Germany, Sweden, and Denmark, and in the latter country they are effective. They also recommend the entire prohibition of the mixing of margarine and butter. Several other suggestions are made, and some change in the law is recommended to prohibit the importation of margarine not packed in accordance with regulations.

Coffee is largely mixed with chicory, and there is no evidence that any other adulterant is used. Occasionally as much as 70, 80, and even 90 per cent. of chicory is found in the samples. The Committee do not make any recommendation as to the labelling of coffee mixtures in addition to a general recommendation as to compulsory labelling with a statement that they are mixtures. Cocoa is not adulterated with ingredients injurious to health, and no special recommendations are made. As to sugar, which is not usually adulterated, the Committee note that it had been proposed that sugars should bear labels showing whether they were made from cane or beet, or are mixtures of the two. An improvement is noted in the composition of lard, and the Committee think that possibly the mixing of lard with a small proportion of beef stearine may be made admissible. As to cheese, the Committee "agree in thinking that the branding or stamping of imitation cheese with an appropriate description might reasonably be required. To go further and require the production of guarantees as proposed from the Governments of the exporting countries is a proposal not to be seriously entertained." Mustard, it appears, is not seriously adulterated. There are no noxious substances employed in beer to-day, but excess of salt is an adulterant, and water and sugar have been detected. The question as to the use of salt and what quantity requires settlement. Drugs are among the other articles referred to, and on this subject the Committee say:—

"As in the case of foods, analysts experience some difficulty owing to the absence of a standard in pronouncing an opinion upon the drug, the purity of which is questioned. It has been proposed, with a view to the removal of this difficulty, that the British Pharmacopœia should be legally constituted the standard for drugs, and that deviations from such standard should be permitted only upon the production of a duly qualified medical practitioner. It has also been suggested that the warranties in respect of drugs supplied by wholesale dealers to retailers should hold good for limited periods only—in the case of decomposable drugs for one month, and in other cases for six months."

Tea is practically without adulteration. Of 1,600 samples examined in the four years ending 1893, not one was reported against. This is attributed to the power of the Customs to examine imports and stop delivery of tea found to be impure. Dilution is the characteristic adulteration of spirits. Of 3,971 samples in 1893, 782, or nearly 20 per cent., were reported against for excess of water. Of a thousand samples of flour only five were reported against. Alum is no longer used. Olive oil is said to be largely adulterated with cotton and other oils. Paraffin wax enters largely into beeswax. Sulphate of copper is used to colour peas, and a limit should be fixed for its application.

#### SUMMARY OF PRINCIPAL RECOMMENDATIONS.

1. That in districts other than county boroughs, where the local authorities fail to put the Acts in force, the County Council should, by their own officers, take samples for the purposes of the Acts.
2. That in connection with the sale of mixed articles it should be obligatory upon the vendor to supply the purchaser with a label setting forth that the article is mixed.



3. That the statement of admixture on labels should be legibly and distinctly printed and so as not to be obscured by other printed matter, and that existing labels should be subject to the proviso mentioned in the concluding paragraph of the section of this report headed "Labelling and sale of mixed articles."

4. That, subject to the limitations indicated in the report, invoices and equivalent documents should have the force of warranties in the cases of all articles to which the Sale of Food and Drugs Acts apply.

5. That the Commissioners of Customs be authorised to examine and take samples of all food imports at the port of entry with a view to subsequent action, as indicated in the body of the report.

6. That dealers who obtain supplies of foods from abroad should be required to submit to the Customs guarantees of purity given by the foreign vendor, together with evidence that they have taken measures to see that the goods are such as they are guaranteed to be.

7. That retailers should be empowered to refuse to sell an article otherwise than in a manufacturer's unopened labelled tin or packet.

8. That the powers of Section 3 of the Sale of Food and Drugs Act Amendment Act, 1879, as to the taking of samples of milk in transit, should be extended to other articles.

9. That the maximum penalty for refusal to sell a sample to the authorised officer be increased.

10. That the division of the sample after purchase and delivery of a portion to the vendor should be compulsory.

11. That samples should be divided into four instead of three parts, and that one of these parts should be at the disposal of the wholesale dealer.

12. That the provisions of Section 5 of the Margarine Act, 1887, as to the exemption of an employer from penalty in certain cases, and punishment of an assistant, should be extended to offences under the Sale of Food and Drugs Acts.

13. That it should be obligatory upon the magistrates or court to refer articles to the Government Laboratory for analysis when such course is desired by either of the parties to the case.

14.—That a defendant who proposes to rely upon the warranty defence should be required to intimate this to the prosecutor within a reasonable time of the service of the summons.

15. That the time allowed for appeal to Quarter Sessions from decisions of local justices should be extended from three to fourteen days.

16. That any person guilty of a second offence under the Sale of Food and Drugs Acts should be liable to a minimum penalty of £5, and that in respect of the third or subsequent offences under those Acts and the Margarine Act, 1887, the punishment of imprisonment without the option of a fine may be inflicted at the discretion of the magistrates or court.

17. That magistrates should be authorised to make orders at their discretion, requiring a person convicted of offences under the Acts to publish a notification of his conviction in the public Press of the locality where the offence occurred.

18. That the definition of the word "food" as used in the Acts should be amended so as to include expressly all articles intended to enter into or be used in the preparation or flavouring of food.

19. That an authority should be constituted who should act as a Court of Reference upon scientific and other questions arising under the Acts, and who should be empowered, at their discretion, to prescribe standards and limits of the quality and purity of food.

20. That candidates for appointment as public analysts should be required to produce evidence that they possess the requisite knowledge of analytical chemistry, in the shape of a diploma or certificate given in respect of such knowledge by a recognised school of chemistry, or scientific examining body, and that in the case of candidates other than duly registered medical practitioners specific tests of the requisite knowledge of microscopy and the bearing of adulterations upon health should be prescribed.

21. That the remuneration proposed to be given to a public analyst should be subject to the approval of the central authority.

22. That the artificial colouring of margarine to resemble or imitate butter be prohibited.

23. That the mixing for sale of margarine and butter be prohibited.

## ADULTERATION IN HERTFORDSHIRE AND THE MILK SWINDLE.

THE quarterly report of Mr. A. E. Ekins, the analyst appointed for the County of Hertford, for the quarter ended 30th June, 1896, says:—

"During the quarter ended 30th June, 1896, forty-one samples of food were submitted to me by your inspectors. They consisted of twenty-four samples of milk, fifteen of butter, and two of coffee. Five of the milks were adulterated, and three were of exceedingly inferior quality, but owing to the very low standard adopted, actual adulteration could not be certified in these three cases. Of the five adulterated milks, four were deficient in fat, and with regard to these I should like to refer to my report of the corresponding quarter of last year, in which I drew attention to the change of method of adulterating milk that has come about during the last few years.

"Formerly the practice was to add water pure and simple. Now I find the commonest mode of fraud is the mixing of separated milk (that is milk from which the cream or fat has been abstracted) with new milk and charging the price of new milk. Commercially the one is as great a fraud as the other, since separated milk is of little commercial value, the producer having made his profit from the milk in the shape of cream or butter. Milk from a herd of cows contains from 3·5 to 4·5 per cent. of fat, the standard adopted by Somerset House and analysts is 2·75 per cent., so that a wide margin is left in favour of the vendor, and of course renders the above method of adulteration very difficult to certify to. It is hoped by the vendors of genuine milk that the Parliamentary Committee that has been recently inquiring into the working of the Adulteration Acts will recommend the adoption of a higher standard of per centage of fat in milk. I am pleased to say that the other samples received were all genuine."

## "GOOD 'EVINS!" HOW DID SOMERSET HOUSE DO IT?

AT Liverpool, on July 22, John Bairsto, 148, Commercial-road, was summoned for selling, as new, milk which had been deprived of one fifth of its cream. It appeared that the defendant had disputed the correctness of the analysis, and a sample had been sent to Somerset House, with the result that the ANALYSIS WAS CORROBORATED. A fine of £4 and 25s. 6d. was imposed.—John Hodson, 61, Bamber-street, was fined 40s. and costs for selling as new milk an article containing nine parts of water to every hundred parts of the poorest milk.—Robert Kitching, 90, Boundary-lane, was fined 60s. and costs for selling milk certified to contain five parts of water to every hundred parts of the poorest milk.—Frances Shepherd, Rupert-lane, was fined 20s. and costs for selling, as new, milk containing 4 per cent of water. Inspector Baker proved the cases.

A few more accidents or guesses like the above may lead to Somerset House being suspected of recovery from its chronic condition of insolent incapacity. If its heads had a few lessons in analysis from reputable analysts, we might even have hopes of their ultimate fitness for gin and beer testing.

AT Cork, again, on July 31, the case of Thomas Burke, farmer, Clogheen, who was summoned at the suit of the Corporation, under the Food and Drugs Act, for selling adulterated milk, and which was adjourned in order to get the Somerset House analysis, was heard. Mr. Galvin, who appeared for the Corporation, said the bench would remember that in the original certificate of Mr. O'Mahony, City Analyst, it was stated the sample of milk was deficient in fat to the extent of 12 per cent. as compared with low quality milk. He now read the certificate from the analysts of Somerset House which showed that the sample in question was deficient in fat to the extent of not less than 12 per cent. The bench decided to fine the defendant 20s. with 20s. costs. It would appear that Somerset House is at last finding out where it are.

## WEST SUSSEX COUNTY COUNCIL AND ADULTERATION.

MR. OTTO HEHNER, the public analyst, reports that out of 42 samples made up as follows—olive oil 21, whisky 13, milk 8—only one sample of olive oil was not of the required standard, two samples of whisky contained more water than allowed by the Act, while the whole of the milk samples were passed as genuine. The percentage of adulterated samples is 7·1, or considerably below the average for the whole country.



## ADULTERATION IN DERBYSHIRE.

THE County Analyst, Mr. John White, F.I.C., reports as follows:—"During the quarter ending June 16, 249 samples of food and drugs have been submitted to me for analysis. The samples contained the following articles:—Milk, 29; butter, 55; margarine, 1; lard, 5; flour, 5; bread, 1; cheese, 1; coffee, 15; oatmeal, 18; pepper, 23; mustard, 7; ground rice, 5; arrowroot, 3; corn flour, 1; Demerara sugar, 3; ground ginger, 9; malt vinegar, 7; whisky, 17; rum, 18; gin, 8; brandy, 1; violet powder, 5; linseed meal, 4; precipitated sulphur, 2; cream of tartar, 2; bicarbonate of soda, 1; citrate of magnesia, 1; olive oil, 1; tartaric acid, 1. The total number of adulterated samples was 13, which gives a percentage of 5.2, as compared with 8.9 for the previous quarter. No samples have been submitted to me under the Fertilisers and Feeding Stuffs Act. It would undoubtedly have added materially to the value of this Act if provision had been made for the appointment of inspectors with power to take samples for analysis.

## CO-OPERATIVE COCOA.

At the Melton Mowbray Petty Sessions, the Melton Mowbray Co-operative Society and Alexander Strong, secretary, Grantham, were charged with selling cocoa to Superintendent Bott which was not of the nature, substance, and quality as demanded by the purchaser, at Melton, on May 27.—Defendant pleaded guilty, but explained that it was done inadvertently, and not with any intent to defraud.—Mr. Geo. Rowlatt, who prosecuted, stated that an analysis of the cocoa showed that it contained eight per cent. of sugar and starch. While defendant was perfectly at liberty to sell such admixture providing he notified the same, he could not legally do so otherwise, and in this case the article was sold as pure cocoa.—Defendant explained that only 4d. per pound was charged for the cocoa, which was admitted to be a mixture.—It had been in stock a long time, and through a change having been made in the salesmen the label stating that it was a mixture had been lost.—A fine of £2 and costs was imposed, the Chairman remarking that although they did not think there had been any intention to defraud, still they must protect purchasers of these cheap articles.

## COPPERED PEAS.

At Southwark, on July 30, John Parker, grocer, 71, Blackfriars-road, appeared to an adjourned summons taken out by Mr. A. A. Grist, inspector to St. Saviour's Board of Works, Southwark, charging him with having, on June 5 last, "unlawfully sold preserved green peas mixed with injurious ingredients, so as to render the same injurious to health, in the following proportions, viz., copper 0.79 grain per pound of peas, equivalent to 3.11 grains of sulphate of copper."—The case had been adjourned at the defendant's instance for an analysis at Somerset House, the result of which confirmed the report of the local analyst, Mr. Bodmer.—Mr. Topham, solicitor to the Board of Works, appeared for the prosecution, and reminded the Court of the recent case of *Grist v. Summers*, which went to appeal at the sessions. In that case the decision of Mr. Fenwick was upheld, and the conviction of the defendant, who was fined 40s, was confirmed. The present defendant must have known of the case, and, therefore, he had no excuse.—The Magistrate: I suppose they have these peas in stock, and want to clear them out.—Mr. Topham: They should send them back to the wholesale dealer.—Mr. Beck, who appeared for the defence on behalf of the Metropolitan Grocers' Association, said that the defendant would plead guilty. It might be said in mitigation that the wholesale dealers from whom the defendant obtained the peas had a sample analysed from the same parcel, which showed only a third of the quantity of copper named in the summons. The defendant was told he might safely sell the peas, and he did so, but it appeared that unless he had every bottle analysed before selling it he was not safe. He asked the magistrate to consider the difficulty in which the retailers were placed with regard to the sale of these peas, for which there was a large public demand. Moreover, a proposition was before the House of Commons to establish a Court of Reference, which should fix standards of quality in regard to various kinds of preserved foods and other questions of importance to the commercial community. The Magistrate: Has the defendant a large business?—Inspector Grist: He has several shops, your worship.—The Magistrate: Now, Mr. Parker, you must have known that this case had been decided in this court some months ago.—The Defendant: I did not know it, sir.—The Magistrate: Then a man in your position ought to know it. You will be fined £20 and 17s. 6d. costs.

## A FÆTUS IN THE ABDOMEN OF A MAN.

A REMARKABLE case was presented before the Academy of Medicine (Paris) by Lévy (*La Semaine Méd.*, May 6, 1896). A young man, aged nineteen, suffered for two years with an abdominal tumour. At operation, this tumour, which had grown to the size of a child's head, was found to be situated retroperitoneally between the mesenteric reduplication. It contained a yellow gelatinous fluid, and a female fœtus of about the fifth month of development. The patient died twenty-four hours after operation.

The tumour was evidently to be classed among the dermoids, and was really a rudimentary twin, which after a long period of inactivity had resumed its development, and the fœtus was therefore the sister and not the daughter of the patient.

## CORRESPONDENCE.

## THE CANDIED LEMON SWINDLE.

To the Editor of FOOD AND SANITATION.

SIR,—Are you aware of the great quantity of spent lemon peel which is being sold every year? Hundreds of tons are candied annually. It seems rather unjust that unscrupulous tradesmen should be allowed to sell peel from which as much as possible of the juice has been extracted, while those selling spent ginger are hauled up and fined. I certainly consider the one as great a fraud as the other.—Yours truly,

F. E. GADD.

West Smethwick, July 31.

[Perhaps some of our readers will take samples of this article.—ED., F. & S.]

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

Chemist to the Dutch Admiralty.

(Continued from page 371.)

Assessor Hoffmann, Berlin, came to the end of the meetings, when almost all the representatives of the trade were pressing for as low a test as possible and the 4,000,000 M., and the high (*sic*) English test of 73° F.—23° C., and on that account the so "dear English oil" formed the heavy artillery of their arguments. They returned to this increase of price, in fact, on account of the unsatisfactory answer of Schütte and Friesland, not less than four times. That the answers of these gentlemen were so indistinct and unimportant arose from this, that the circumstances of the case were not clear to themselves, if it is not too severe to remark this of the partner of a petroleum refiner. In case the "American friends" of Schütte were the leaders of the Standard Oil Company, therefore Rockefeller, etc., then the cause can be another one. The state of matters is then, I suppose, the following:—The Standard Oil No. 1 contains about 5 per cent. of naphtha, which boils below 212.0° F., which lowers the flash point from 104.0° F. to 68.0° F. to 75.2° F. In the year 1893 America has manufactured 48,000,000 barrels of petroleum. Let us presume that half of it is Standard Oil No. 1, with 5 per cent. naphtha, a supposition which is too little rather than too great; then the 24,000,000 barrels containing about 1,200,000 barrels of naphtha boiling under 212.0° F., equal to about 200,000,000 litres. If this naphtha were not disposed of as burning oil, then the price of the remaining naphtha would be considerably lower. The advantage is therefore twofold. The otherwise less valuable naphtha is now sold as burning oil, and the naphtha itself becomes dear thereby. The 200,000,000 litres naphtha sold as burning oil at 1½d. to 2d. per litre retail would have a value of about 25,000,000 M. How many millions alone are "scooped in" as profit cannot be exactly stated. For Germany one can make the following approximate estimate:—In the year 1894 Germany had an import of 785,000,000 kgs. petroleum, therefore in round figures 1,000,000,000 litres. Supposing (which is rather too low than too high), that two-thirds of this is Standard Oil, No. 1 with 5 per cent.



naphtha boiling under  $212^{\circ}\text{F}$ . (the presence of which lowers the test from about  $95^{\circ}\text{F}$ . to  $71^{\circ}\text{F}$ . to  $75^{\circ}\text{F}$ .) that means: 30 to 35,000,000 naphtha sold as burning oil at  $1\frac{1}{2}\text{d}$ . per litre, equal to about 4,000,000 M. sale value. Therefore it is worth while for the Standard Oil Trust to try to keep the test as low as possible. Already a contents of 1 per cent. naphtha more or less (which can correspond with the difference in the flash point of 3 to 4 per cent. C.) can for Germany alone mean for the Standard Oil Trust a gain of many hundred thousand M. more or less.

How exaggerated, to say nothing else, are now the further communications with Schütte, which he likewise received from his "American friends," and which also concerns the price. Thus he asserts (page 4), in case Germany would likewise fix the American test of  $120^{\circ}\text{F}$ . (= English minimum test of  $73^{\circ}\text{F}$ .), the difference of price which the oil of  $110^{\circ}$ , American test ( $68^{\circ}\text{F}$ ., Abel) would amount to 3 pfennig per litre "for the great German demand." Assessor Hoffmann (page 70) said rightly, "Then I must accept, I suppose, that the valuation of Mr. Schütte, according to it the difference of price (of 1 cent. per gallon, which we spoke of just now) which exists already, would rise threefold if Germany would fix this high test,  $73^{\circ}\text{F}$ ., Abel"). As an answer thereupon, Schütte and his American friends call the partner of the refinery of Korff, Mr. Friesland, to their aid. And what did the latter say? "As a proof that the high test oils are also very dear to produce, I may mention, I suppose, that here in Germany the so-called Astral oil is also sold. This is a high test oil, and therefore the importers here in Bremen ask 5 M. per cwt. (50 kgs.) more than for ordinarily refined Standard White petroleum, while we ask only 3 M. for our Kaiser oil." But the Astral oil and the Kaiser oil are oils of about  $104^{\circ}\text{F}$ ., Abel test; in fact they are luxury oils, paid by the highest circles with luxury prices, that is to say, far too high. This is no proof that the "gentlemen over there" have to fight with many difficulties in order to produce these high test oils. What difficulties can there be? It is a question simply of a fractional distillation, and the gentlemen over there supply oil of about  $230^{\circ}\text{F}$ ., Abel test (= about  $230^{\circ}$  or  $300^{\circ}\text{F}$ ., fire test), the so-called heavy mineral oil or mineral colza oil, with 10,000 kgs. for about the same price as the usual Standard Oil, No. 1. Thus there were in August and September of this year 150,000 kgs free for 14s. 2d. to 15s. per 100 kgs. (=  $1\frac{1}{2}\text{d}$ . per litre, exclusive of Bar), as is burned on the war ships of the Dutch Marine in ordinary "Lampes belges." And was it impossible to do then in 1880 what the firm Poth, Mannheim, competing with the Standard Oil does now (October), namely, to supply an oil of  $80^{\circ}\text{F}$ . to  $82^{\circ}\text{F}$ . at the same price as Standard Oil of  $71^{\circ}\text{F}$ ? The Astral oil, introduced into the debate at this point, caused more confusion than there existed already. The affair was simply as following:—In order to bring oil of  $110^{\circ}\text{F}$ ., American, to  $120^{\circ}\text{F}$ ., American, a less contents of naphtha, of at most 1 per cent., perhaps  $\frac{1}{2}$  per cent. is sufficient (see above): Schütte, or more correctly "his American friends," assert this raising of test of about  $5^{\circ}\text{F}$ . would cause a raising of price of three cents per gallon, equal to about  $0^{\circ}48\text{d}$ . per litre, that is to say of about 20 per cent. (reckoning the litre at  $2^{\circ}40\text{d}$ ., the price of 1880 to 1881) "for the great German demand." This really means that the "gentlemen over there," who would like to continue to "scoop in enormous profits" (Kissling), are firm and will arbitrarily raise the price of oil. It is plain enough: behind the contradiction wafted over from America, not "apparent" but real, is hidden the American dollar.

And now the second point from Schütte's speech, which also exercised a great influence over the debate. If the first, as we have seen, found its origin in America, the second point concerns communications which he has received from Mr Redwood. He says (report, page 5) — "I was in London in October last year in order to

inform myself exactly about the state of petroleum, saying to myself, if the German Empire should send out directions, we must prepare ourselves in time in order to make similar arrangements for the trade as in London. The Secretary of the London Petroleum Association, Mr. Redwood, willingly gave information about everything, and began by explaining how England came to the high test (*sic*) of  $120^{\circ}\text{F}$ . (that is to say, American fire test equal to  $73^{\circ}\text{F}$ ., Abel). The English coal oil was in former years, before petroleum was imported, exclusively used for burning purposes: the manufacturers of coal oil, the proprietors of coal mines, looked therefore upon petroleum, which competed strongly with English oils, with suspicion, and either they themselves or influential friends knew, to bring it about, that a high flash point for petroleum was prescribed, in order to make it as dear as possible."

There was no reason that Schütte should take these communications of Redwood *cum grano salis*. But, seeing that a difference of price between oil of  $110^{\circ}$  and  $120^{\circ}\text{F}$ ., American fire test, does not need to exist at all, people would have liked to hear something more of this influence of the coal oil manufacturers and of the Protection of this oil. The question whether the admission of 6 to 8 per cent. naphtha in petroleum has not proved to be an enormous Protection of the Standard Oil Trust can then also be discussed. Also the fact that Redwood looked at the whole question of flash point, of course unknowingly, thought strongly-coloured commercial spectacles, and expected help only from safety lamps was not apparent then as now. His expression regarding this we have already touched upon before. Also Redwood speaks, as is done in the whole discussion by the commercial gentlemen, of the "high test of  $120^{\circ}\text{F}$ ." This high temperature makes upon non-experts or upon chemists, who have not studied this question more closely, the impression, as if an oil which only seems to begin to burn at this temperature is still a very safe one. As further  $120^{\circ}\text{F}$ ., American fire test (=  $100^{\circ}\text{F}$ ., old English test), is said to correspond with  $73^{\circ}$  (Abel test), it follows that this test is surely really not too low. I have already minutely pointed out how thoroughly wrong this comparison is, also communicated and shown the simple experiments which prove the blunder, that the oil which only begins to burn at  $120^{\circ}\text{F}$ . is no longer the original, but oil, of which during the trial an important part of the most volatile, therefore exactly the most dangerous parts, is evaporated. A practising student of the first term will find that out. Still Spencer continues in official reports to maintain that oil of  $73^{\circ}\text{F}$ . (Abel test) does not develop any inflammable vapours under  $100^{\circ}\text{F}$ ., and Redwood has not found out yet that the "high test of  $120^{\circ}\text{F}$ ." (American fire test) is only apparently high.

We must point yet to another standpoint which is chiefly taken up by the representatives of the trade. Schütte says at the very beginning (page 5)—"One must not go further than is necessary for the protection of the careful consumer," and such like remarks are found later on repeatedly; also Messrs. Weber and Brunnen-graber, who do not belong to the trade, join them and consider the so-called English test of  $120^{\circ}\text{F}$ . American too high. This standpoint at that time can be understood, firstly, because people had reason, as has also been shown by examples, to ascribe the occurring accidents almost exclusively to the petroleum adulterated with naphtha, and because they did not know that also the  $110^{\circ}\text{F}$ . American test oil contains about 5 per cent. of naphtha boiling under  $212^{\circ}\text{F}$ .; secondly, because the use of petroleum for cooking apparatus, and cheap, primitively constructed lamps was not so great at that time as it is now. Yet I consider the standpoint which takes into consideration only the "careful consumers" an entirely false one. The Board of Health had in the "Materials" (page 4) already pointed out that "the consumer is frequently too indolent to avoid danger."

(To be continued.)



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# Food & Sanitation

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## Food and Sanitation.

SATURDAY, AUGUST 15TH, 1896.

### SIGNS OF THE TIMES AND ANTI-VACCINATION TRUTHS.

WE often wonder if the public would pay the attention they do to anti-this and anti-that humbugs if they knew anything about the silly creatures and the causes which compel them to craze-mongering. To take the anti-vaccinators as a type, their leading legal mouth-piece is an uncouth ego-maniac, whose wife had to live apart from him for years on account of mental obsessions, leading to conduct which every alienist would recognise as conclusively proving his insanity. With

the aid of his wife's money this poor imbecile got called to the Bar, where his ego-mania has full play for mischief. Some claim for him a measure of ability, but it is not uncommon to find ego-maniacs showing cunning and ability in certain directions, as was evidenced not long ago in the case of the most pitiable ego-maniac of our day, Oscar Wilde, for whom an asylum instead of a prison should be found. The same kind of pitiable conceit which led Wilde to inform the Atlantic Ocean that "he didn't think much of it," causes the anti-vaccination ego-maniac to glory in an anti-social act which he foolishly flatters himself makes him a martyr. It leads the weak-winded to a state in which they cannot differentiate between a lie and the truth, and the pity of it is that a large portion of our daily press, caring less for the public welfare than catch-penny sensationalism, affords these ego-maniacs an opportunity of airing their ignorance and vanity. Some of the journals—such as the *Echo* and the *Weekly Sun*—do worse than this, for they encourage dangerous quackery. Neither Mr. Passmore Edwards nor Mr. T. P. O'Connor would be such asses as to believe for a moment that they could rely upon the advice by letter given in their medical columns if they themselves were the victims of illness, yet they allow the public to be humbugged by their "medical column" quackery. Journals like the *Star* and *Daily Chronicle* give equal prominence to the ego-maniacal drivel of the anti-meat, anti-tobacco, anti-alcohol, anti-marriage—in fact, anti-everything George Bernard Shaw and his like, or invite the public to hearken to the philosophic message of Frederick Nietzsche, who, poor maniac, has been for long the habitant of an asylum; or they affright our eyes with the art (heaven preserve us!) of William Morris and Burne-Jones. These persons are doubtless worthy of pity, but it is the very worst form of stupidity to allow them to appear in print. The editors who permit it know very well all the high-falutin words about art are bunkum, but they allow the rubbish to be printed because they think it will sell their journals. During the past twenty years we have been invited to join as many societies and movements as would absorb every one of our moments, waking or sleeping, and we have been told that we should be fellows of this society or that society, from the Chemical Society to the Balloon Society, upwards or downwards. It doesn't take long for a healthy-minded person to take the measure of the victims of learned and other society manias, but the mass of the public know little of the inner working of the many humbugs. Dionysius Lardner, though one of the least learned of the learned men of Europe, had more letters weighing down his name than any half-dozen real scientific men living in his day, but those letters enabled the braggart Dionysius to "sweat" scribes and hocus publishers into paying for printing and selling rubbishy cyclopædias and trashy pseudo-scientific rot by the ton. A safe principle, said one observer, is for the public to beware of anything started by "experts," and to regard with grave suspicion everything alleged by missionaries. These persons and anti-vaccinators suffer from a chronic incapacity to speak the truth upon any question. We are not at all sorry to see that Dr. Taylor Manson, the Public Vaccinator of Darlington, has taken one of these anti-gentry by the throat, with regard to a libellous statement contained in a pamphlet issued by the anti-vaccination league of that town, and entitled "Vaccination Injuries; the Annals of the Poor." The statement referred to operations performed at the vaccination station with lymph from the arm of a child suffering from "scabs and sores" on its head, and describes the vaccinator as cursing the mother for not earlier calling his attention to the case. The guardians having had their attention called to the matter, at first seemed inclined to regard it as personal to Dr. Manson, but later came to the conclusion that they should investigate the subject, since it bore upon the conduct of a public official. In



the interval, however, Dr. Manson, through his solicitor, took action, with the result that an apology was elicited from Mr. George S. Gibbs, Fellow of the Royal Statistical Society, who had collated and prefaced the aforesaid "Annals," and who had now to say that he believed the statement to be "absolutely unfounded," and as not relating in any way to Dr. Manson; "nor am I," he adds, "able to afford any proof whatever of its correctness," and the pamphlet has been withdrawn from sale.

Not long ago, when Mr. Victor Horsley bluntly called one of these ego-maniacal creatures "a liar," there was a howl of horror from the lady's press supporters. We have not seen the *Echo* or the *Star* doing any powerful howling about this scandalous lie upon Dr. Taylor Manson, or attendant exposure of anti-vaccination truth. If our Bernard-Shaws, Grant Allens, Frances Power Cobbes, and a host of other anti-this and anti-that "bounders" were treated as they should be by our press—with contempt—they would be powerless for mischief, but their ego-mania is encouraged, with the result that we have criticisms of music and art worthy only of Colney Hatch, rubbishy bosh like "The Heavenly Twins," "Gallia," "The Manxman," or "The Woman Who Did," and a mentally and physically decrepit body of persons, who look at everything that exists from the point of view of the Irishman who, being wrecked on an unknown island, demanded of the first person he met, "Have you a government here?" and on the answer being "Yes," hastened to say, "I'm agin it." Our newspapers, magazines, and circulating libraries are conduits for pornographic literature, or for the sickly rot of the Rossettis and Burn-Joneses, dubbed art; our streets are made hideous by the wretchedly acted antics of the semi-civilised apes who fasten on Salvation as a means of securing an idle living. The men who made England great were not anæmics or *miserables*, who would start affrighted at the sight of a good square meal of beef and bread washed down with ale. It is not a cheering sign of the times that imbeciles of the types instanced can get a hearing in our newspapers and find followers in scores of societies, and those who nail the lie on the counter as Dr. Taylor Manson has done do something at least for common-sense, right thinking, and the true progress of humanity, for they show the rottenness of one dangerous craze and the methods of its silly advocates.

#### LIVERPOOL MILK SUPPLY: NO PUBLIC PROTECTION.

At the last meeting of the City Council, Mr. Shelmerdine invited the attention of the Council to this matter as one of great importance. It had been stated by the medical officer, at a meeting of the committee last January, that between 4,000 and 5,000 cows were tied up in Liverpool shippens, and that the commonest form of disease among them was tuberculosis. The report of the Royal Commission on the same question, which proved by ample experiment the widespread danger to the public arising from tuberculous milk, had now been issued eighteen months, yet in Liverpool absolutely nothing so far had been done for the defence of the public. It could not be surprising that animals deprived of light, exercise, and pure air should become to a great extent diseased. He had obtained samples of milk from fourteen different Liverpool shippens, and had submitted them to Dr. Sims Woodhead, who was probably the greatest authority on the subject, for analysis for the bacilli of tuberculosis. Six other samples had been submitted to an eminent London analyst, and experiments had been made by inoculating animals with this Liverpool milk. In four out of the twenty samples the bacillus of tuberculosis was discovered to an alarming extent. There could be no doubt that this condition of the milk supply had a direct bearing on

the fact that the death-rate among artificially-fed children in Liverpool was fifteen times as great as among children fed by their mothers. Tuberculosis accounted for one-ninth of the death-rate. What steps were taken by the Health Committee to protect the public from this danger? Shippens, he admitted, were inspected, and samples taken for analysis. But that analysis was only for water, though it would be better if 25 per cent. of the Liverpool milk was all water (hear, hear, and laughter); whilst the inspections of shippens were not conducted by veterinary surgeons, who would know a diseased cow from a healthy one, nor had any milk ever been condemned in Liverpool because tuberculous. Though diseased cows were of greater danger to the public than mad dogs, their existence appeared to be overlooked by the authorities. What the committee did was to take in the whole of Liverpool two samples of milk daily for analysis for water only. It was a splendid record of effort. (Laughter.) In these circumstances, he moved that the medical officer of health prepare a supplementary report on the milk supply of Liverpool, with special reference to tuberculosis, and be authorised to undertake a full experimental inquiry.

Dr. Clarke could not allow the remarks of Mr. Shelmerdine to pass wholly unchallenged. He noticed that Mr. Shelmerdine had made great use of the alarming mortality from infant diarrhoea. As a matter of fact, the greater number of deaths from infant diarrhoea occurred in the lowest parts of the city, where children were fed, not on cow's milk, but on condensed milk and highly improper food.

Mr. Shelmerdine's amendment, which was seconded by Mr. Roberts, was then agreed to without a division.

#### HOW DOTH THE LITTLE BUSY BEE.

A RUTHLESS truth seeker long ago proved the bee to be a very overrated being by showing its folly in slaving away at honey gathering only to be smoked out and have its "pile" confiscated, for all the world as if it were a trader on the Westminster, Portland, Bedford, or Salisbury estate whose lease was out. That is enough to do away with its claim to wisdom, anyway, and the bee may deserve the censure, but its character for a dull and laborious honesty might well have been permitted to remain unassailed. Yet, when honey like the following is vended the bee's reputation is bound to suffer, like the hen's good name did when the hotel visitor remarked that "if that egg was fresh, the hen that laid it must have a mighty amount of disease in its innards." The honey was sold by Mr. Thomas Roberts, grocer, Maerdy, who was summoned under the Food and Drugs Act, at the Pontypridd Petty Sessions, on August 6th, for selling honey in which was mixed 50 per cent. of dextros, or starch sugar, a substance of the value of 4d. per pound, as compared with 1s. per pound, the price of pure honey. The sample was taken by Mr. Supt. Jones, D.C.C., on June 30th, who produced the analyst's certificate.

The defendant said he believed it to be of pure quality.

Dr. Hunter, who was on the bench, remarked that patients were often advised to take honey for certain complaints, and added sugar, such as was found in the present sample, had a very injurious effect upon them.

A fine of £3 11s. 6d., including costs, was imposed. It pains us to say so, but we do not share this defendant's belief. We really—not even if, assisted by Somerset House, Professors Abel, Dewar, and Bramwell declared this the best of all possible honies—could not regard it as the product of even the most abandoned of bees. It may be that a "Lloyd's cow" can adulterate its milk with an extra 8 per cent. of water, but the bee is not built that way. It makes its honey for home use, and consequently makes it good and genuine.



## MANURE SWINDLES.

In another column we publish a report by Dr. Bernard Dyer, which throws a sinister light upon the methods by which farmers are defrauded of their money. With all Lord Burghclere's bounce and the late Government's protestations of the benefits the Fertilisers and Feeding Stuffs Act would confer, not one sample was officially submitted from the important agricultural county of Leicestershire during the past three months. A member of the County Agricultural Society privately submitted two samples of so-called manure sold in Leicestershire at £5 10s. and £4 per ton respectively. This so-called manure, in both cases, says Dr. Bernard Dyer, proved to be worth at the most a few shillings per ton. It contained only one per cent. of phosphate of lime and a very small fraction of ammonia, and contained little of any appreciable value except a little sulphate of lime. For most land it would be scarcely worth while to pay carriage and cartage on the material.

An Act was passed to stop this sort of swindling, but thanks to that empty-headed person, Mr. Herbert Gardner, the Act is not worth the paper it is printed on; although it wasted a great amount of House of Commons' time. It was an optional Act, and therefore useless. What is everybody's business is nobody's, and no Act to suppress fraud is worth a rap unless it be compulsory, and machinery provided or delegated to the enforcement of it. For this signal legislative achievement, however, Mr. Gardner got a peerage! In the meantime the farmer is being swindled out of £4 to £5 per ton for rubbish. He expects a heavy crop and does not get it. He blames the seedsman, declares the use of manure a humbug, and resigns himself to fate. If it was worth while passing an Act to check such swindles upon him, surely the Act should be enforced.

## BORACIC ACID IN MILK.

At Enfield Police-court, on August 10, the hearing of a case took place in which John C. Walter, of Ponder's End, was charged with selling to Arthur Liddell Bridge a certain article of food, to wit, new milk, which was mixed with boracic acid, the said milk being thereby rendered injurious to health. H. E. Bowles, Esq., was in the chair, supported by C. Matthews, Esq., and A. G. Kitching, Esq.—Mr. A. L. Bridge, the inspector, conducted the case for the Middlesex County Council, and Mr. John Avery, solicitor, defended.—Mr. Bridge deposed to the facts of purchase and was not cross-examined.—E. Bevan, Esq., the analyst, gave evidence bearing out his certificate, and stated that the milk contained 30 grains of boracic acid per pint, and that it also contained 10 per cent. of added water. He based his opinion upon the fact that the sample contained .343 of borax.—Asked by Mr. Avery if he knew a Mr. Gregory, he said, "Yes."—Would you consider that .214 of borax was a small quantity?—Mr. Bevan: But he surely has not found that?—Mr. Avery: But he has; I have it here.—Mr. Bevan: But I think you make a mistake; you probably mean .214?—Mr. Avery: You see the figures .214 are very nearly ten times more than mine. (Great laughter).—Mr. Avery: Yes, there is a mistake somewhere.—Mr. Bridge then called Dr. Thomas Stevenson, who said: I am a Doctor of Medicine, a Fellow of the Royal College of Physicians, Lecturer on Chemistry, and on Medical Jurisprudence at Guy's Hospital, Scientific Analyst at the Home Office. I have devoted time and study to poisons, and have written on this subject; I am President of the Society of Public Analysts, and am Public Analyst for the county of Surrey. Boracic acid and preparations thereof are largely used as preservatives of food. About 2.1 per cent. of boracic acid or 0.15 of borax is sufficient to preserve milk for 24 hours, and this amount should not, in my opinion,

be exceeded. Further, I am of opinion that if milk be kept in clean vessels it will keep 24 hours in its natural state. The quantity of borax taken by a child should not exceed 10 grains per day, and a larger quantity is attended with risk to health. These substances, when used in excess, checks digestion, in large quantities capsize the heart, and causes skin eruptions sometimes. Thirty grains per pint of milk is an excessive quantity of borax, and any person, especially a child, taking such milk in ordinary quantities would take an excess of borax, with the attendant evils. Ordinarily a child would take about one and a-half pints of milk per day.—Mr. Avery did not cross-examine.—Mr. Bridge: That is my case, your Worship.—Mr. Avery then addressed the Bench in mitigation, and said he was instructed that his client had not put the acid into the milk, and denied absolutely all knowledge of its presence.—The Bench were of opinion that the offence had been clearly proved, that the milk did contain an injurious ingredient, but as this was the first case of its kind they, to some extent, looked upon it with a lenient view, and imposed a penalty of 20s. and costs £1 12s. 6d.

## THREE THOUSAND POUNDS FOR BAD DRAINS.

An important action was concluded at Birmingham Assizes on Aug. 5, in which the executors of Thomas Smith, brother of a former Mayor of Birmingham, sued the King's Norton District Council for £10,000 damages, in respect of his death, which resulted from blood poisoning, the alleged consequence of a defective sewer ventilator carried up a chimney of his house. The local authority had, on request, stopped the connection with the sewer, but plaintiffs alleged that the work was done in an imperfect manner. The defence was that the house was insanitary from private causes. The jury found for the plaintiffs, £3,500 damages.

## ADULTERATION IN MANCHESTER.

THE report of the public analyst for Manchester, just issued, is the most satisfactory ever issued. Out of 280 samples of milk analysed within the last quarter 262 were pure, and the remaining eighteen were only slightly tempered with water. Out of thirty-six samples of butter examined thirty-four were pronounced absolutely genuine. The same is said of other articles; out of ninety-six miscellaneous samples exception could only be taken to two.

## MILK SUPPLY IN URBAN DISTRICTS.

A PAPER read by James T. Neech, L.R.C.P. Ed., D.S.Sc. Vict., Medical Officer of Health, Atherton, Physician to Leigh Joint Fever Hospital, at the Public Health Section of the annual meeting of the British Medical Association held at Carlisle on July 30.

It is not my intention to discuss the important place which milk occupies as an article of diet, nor the effects produced upon the health of the people by an impure or unwholesome supply, but to draw attention to some of the conditions under which this trade is carried on in urban districts, and offer a few suggestions for its improvement.

The purity and wholesomeness of milk depends upon three things, viz., (1) Freedom from adulteration, (2) health in the cow, and (3) freedom from contamination with noxious microbes.

I believe adulteration is not so much practised as formerly. During the past four years I have not been able to secure a single sample of adulterated milk; in fact, the samples taken have been of good quality. Where adulteration is practised it is probably done with more care, and so as not to reduce the fat below the usual standard. A high state of health in the cow is essential to the production of perfectly good milk,



consequently given a healthy cow it is necessary that it should be placed amidst surroundings conducive to the maintenance thereof. Of course, in the summer months, whilst the cow lives entirely out of doors, such is the case, but during the remainder of the year, when it is confined partly or wholly to the shed, the conditions are changed, for we frequently—I would say mostly—find cows confined in sheds which are quite inadequate as far as air-space is concerned.

In Atherton the regulations require 600 cubic feet of air-space per cow, and in the county of Lancaster, according to Dr. Sergeant's annual report, the free air-space required in those districts where regulations have been adopted varies from 800 to 420 cubic feet. I consider these amounts not sufficient, and that in every case at least 1,000 cubic feet should be allowed.

Cowsheds are, as a rule, badly constructed, so that their ventilation and lighting is very defective. They frequently adjoin some other building, and can be lighted and ventilated from one side only, and, even where this is not the case, the windows are small; some do not open, whilst those that will are seldom or never made use of. In fact, the tendency is rather to block up every opening and cranny, with the mistaken idea of keeping the animals warm.

The floors are often imperfect and not laid with a sufficient and even fall to allow of a quick discharge of liquid excreta, consequently it soaks through into the soil beneath; gases of decomposition arise therefrom, and from the solid excreta, the removal of which is often delayed, and further contamination of an already polluted atmosphere takes place.

Special openings for ventilation purposes are the exception and not the rule. Seeing that a cow requires to be supplied with about 12,000 cubic feet of fresh air per hour to maintain the air at the recognised standard of purity, free ventilation is absolutely necessary to the maintenance of health.

A cowshed should be a separate building. The windows should be of sufficient area and placed on both sides of the building, so as to well light the interior throughout. In order to secure efficient ventilation an inlet area of about three square feet per cow is required, and this should be so arranged that it can be reduced at pleasure in accordance with the state of the wind and weather. Such an area can be obtained by a swing window opening in the form of a Sherringham valve, air-bricks around eaves, and ground ventilators. An outlet area of a similar size through the top of the roof or ridge should also be provided.

The importance of cleanliness in the cowshed is not sufficiently realised by dairymen. The excreta is not removed often enough, and this work is seldom or never efficiently done; particles are left sticking to the walls and adhering to the floor, and I believe the floor is seldom thoroughly cleansed with water. If the organic matter derived from the skin and lungs of human beings is so injurious, what must the case be in a cowshed where animals live amidst, not only the exhalations from the skin and lungs, but where the discharges from the kidneys and bowels are also deposited?

Limewashing is not attended to as it should be; cobwebs hang from the ceiling and in corners laden with dust; dust is allowed to collect on the walls and deposit thickly on the window sills and all surfaces capable of receiving it. On one occasion I pointed out to a farmer that he had not limewashed the top of his cowshed. The reason he gave for not having done so was that it would remove the cobwebs, and they were useful, he said, because whenever the cows brushed the flies off their bodies with their tails they flew up to the ceiling and were caught in the cobwebs.

A pure water supply is absolutely necessary, not only for the cleanliness of the dairy utensils, but also for the cows to drink. Improvement in this direction has, I think, taken place in recent years in urban districts, as

a number of farms now have town's water laid on, and thus have a good water for cleansing purposes and for the cows to drink when at home; but some still rely upon local supplies derived from shallow wells or small water-courses, and all the more or less depend upon the water from stagnant ponds and ditches for the cows to drink when out in the fields. This is liable to the contamination of surface drainage and other modes of pollution. The cows wade in such water, especially on hot days, and, even if it be not deep enough to reach the abdomen, the constant splashing with the feet will wet the udder. Any microbes that might be present in the water will adhere thereto, and thus find their way into the milk pail. Should the water be polluted with sewage, I believe it possible for the poison of typhoid to be transmitted to milk in this way. The feeding of cows is an important matter, and should be regulated. The food given should be wholesome and nutritious, so that a good quality of milk may result. The feeding should be done at regular hours, or the cows will be kept in a restless condition and the milk affected thereby. They should also be watered and milked at regular times.

Milk being such a fertile medium for the proliferation of microbes of various kinds, and although boiling will destroy most of these germs and render it practically sterile, it cannot remove therefrom the poisons generated therein by them. These poisons are more or less injurious, hence the necessity of guarding, as far as possible, against the admission of dirt and noxious microbes to milk at its source.

The atmosphere of cowsheds such as are referred to in this paper must be laden with germs which will gain access to the milk, especially when the milk-can, as I have seen it, is allowed to stand in the shed to be filled during the milking progress. The milkman seldom or never thinks of washing or cleaning the cow's udder, and it is doubtful whether he thoroughly cleanses his own hands before commencing to milk, consequently any dirt or germs hanging about the udder will fall into the milk-pail.

As a rule the sanitary arrangements about a farm-yard are by no means what they should be, so that every facility exists for the contamination of milk immediately it leaves the cow, and its prevention needs the exercise of due care and perfect cleanliness.

Although milk is such an important article of food, and when contaminated so potent a vehicle of disease, local authorities do not seem to generally realise their responsibilities in connection therewith. In consequence the Dairies and Cowsheds Order of 1885 is not administered in the strict manner which the necessity of the case demands. According to the last annual report of the County of Lancaster, out of 134 districts, urban and rural, in seventeen the supervision of dairies and cowsheds is described as *nil*, and regulations are not in force in fifty others, many of which are important centres of population.

Until all local authorities take up this question in earnest there can, I think, be no material improvement in our milk supply.

Bye-laws prescribing and regulating the lighting, air-space, ventilation, cleansing, drainage, and water supply of dairies and cowsheds should be made in every district, and an adequate number of inspectors appointed to thoroughly and systematically inspect the same and see that they are enforced. Every cow should be examined by a veterinary surgeon and marked before it be admitted into a dairy and its milk sold. The inspector could then see at a glance what cows had been subjected to such examination, and it would tend to exclude tuberculous cattle, the milk of which is capable of giving rise to the disease in the human subject.

A cow-keeper should be compelled, under penalty, to notify to the health authorities the outbreak or existence of any disease among his cows, so that steps might be



taken if necessary to prevent the sale of the milk of such cow or cows.

If it appear to the inspector that any cow is diseased or out of health he should have the power to call in a veterinary surgeon to examine the same and decide as to whether its milk is fit for sale or not. The milk of a badly-nourished cow, even if no actual disease be found, cannot be wholesome as an article of diet.

I think it would be a good thing for local health authorities to issue instructions to farmers and cow-keepers, or otherwise educate them, especially in the relation that good sanitation and cleanliness should bear to their calling as dairymen, because I feel sure that they, as a class, are not sufficiently enlightened upon these matters to enable them to exercise the care and diligence required for the production of milk free from contamination. A stricter supervision must be instituted, and there must be a more rigid enforcement of sanitary laws if our milk supply is to be improved.

#### MICRO-ORGANISMS AND DIGESTION.

THE part played by micro-organisms in digestion has been investigated by Nencki during the past ten years. He has come to the conclusion that they possess the property of changing the insoluble forms of carbohydrates and albumen into a soluble form. As regards the question whether the action of micro-organism is necessary for the normal process of digestion, Nencki endeavours to prove that it is not. The grounds upon which he bases this conclusion are as follows: (1) The acid of the stomach destroys the majority of the micro-organisms; only a small number escape this fate, and get with the food into the intestinal tract. In the small intestines their action is confined to the decomposition of the carbohydrates and the formation of lactic and succinic acid, alcohols, etc. The decomposition of albumens and the formation of the aromatic bodies, such as phenol, cresol, indol, scatol, and of the different acids under their influence, takes place only in the large intestine. Experience shows—the author mentions one case of his own observation and one of Zanowsky, of Warsaw—that one can live very long without the large intestine, if there is an artificial anus near the ileo-cæcal valve. (2) Newborn guinea-pigs were put into a closed bell and kept on a sterilised milk diet, the respiratory air being also sterilised. After a time the animals were killed, and all the organs were found to be quite normal. Microscopical investigations of the intestinal tract failed to show the presence of any micro-organisms. The time will come, says the author, when we shall be able to remove micro-organisms entirely from our food, but at present we can only say that they are only hurtful, and not in any way beneficial.

#### PERCENTAGES OF NICOTINE IN TOBACCO.

THE chemist of the Virginia Agricultural Experiment Station has recently published the results of his analyses in the determination of nicotine in tobacco. The nicotine was determined in the plant at five stages, beginning at the plant-bed, and continuing to the cured plant. Three varieties of the air-dried plant were examined, the average percentage of nicotine found being as follows:—Whole plant, 0.56; at the time of topping, leaf, 3.46; stalk, 1.35; root, 0.80; at time of cutting, leaf, 3.79; stalk, 1.48; root, 0.92; partly cured, leaf, 3.56; stalk, 1.67; cured, leaf, 5.51; stalk, 1.56. The percentage of nicotine in tobacco plant at five stages (calculated to water-free substance), he finds as follows:—Whole plant (from plant-bed), 0.61; at time of topping, leaf, 3.74; stalk, 1.46; root, 0.84; at cutting, leaf, 3.73; stalk, 1.56; root, 0.96; partly cured, leaf, 3.84; stalk, 1.79; cured, leaf, 6.11; stalk, 1.71. In an examination of eighteen samples of different grades of manufactured tobacco of the crops

of 1890 and 1891, the lowest percentage of nicotine found (calculated to water-free substance), was 1.68 the highest, 6.17. The light tobacco was found to contain the lowest per cent. of nicotine, and the dark the highest.

#### AN INTERESTING REPORT BY THE LEICESTERSHIRE COUNTY ANALYST ON COCOA, MUSTARD, MAGISTRATES, AND MANURES.

In his last report to the Leicestershire C. C., Dr. Bernard Dyer makes some remarks upon the composition of mustard and cocoa, which in the light of recent magisterial decisions, are valuable and very necessary. Dr. Dyer says:—

Of the 29 samples of mustard, 25 consisted of pure mustard, while 4 were mixed with wheaten flour, one sample containing at least 5 per cent., one at least 6 per cent., one at least 7 per cent., and one at least 12 per cent.

As the admixture of wheaten flour is only admissible in mixtures sold as "mustard condiment" or under some similar name serving to distinguish them from pure mustard, these four samples which were supplied in response to a request for pure mustard are classed as adulterated. In one case only out of the four was the admixture properly declared at the time of purchase.

The 27 samples of cocoa were all purchased under the simple name "cocoa." Nine consisted of genuine cocoa, that is to say, of cocoa partially deprived of its fat, but containing no material addition to its bulk. The other 18 samples all consisted of mixtures of cocoa, with various proportions of sugar and starch, the starch used being generally some variety of arrowroot.

In all but three cases the fact that the articles consisted of mixtures of cocoa with other ingredients was declared on labels attached to the packages or parcels in which the mixtures were supplied. In the other three cases the admixture was either not declared at all, or not declared until after the vendor had been informed of the purpose for which the sample was purchased.

Seeing that "Cocoa" was the article demanded in each case, I have in my official schedule enumerated all the mixtures as "adulterated," i.e., as not of the nature, substance, and quality demanded, although, as already said, the fact of the admixture was in most cases actually declared by label, and in such cases the sale is not to be regarded as fraudulent.

The prices of the various cocoa "mixtures" in the market are very variable, and, generally speaking, may be said to correspond fairly with the proportions of cocoa present, so that the purchaser cannot be said to be defrauded in purse. It appears desirable, however, that the public should know that, in purchasing mixtures, or, at any rate, the lower class ones, they are buying chiefly sugar and starch, with only a small quantity of real cocoa. Sugar and starch are of course nutritious, and the mixtures are, in most cases, intrinsically worth the prices charged for them. Cocoa, however, is an article which is not used merely for actual food purposes, but also, like tea and coffee, for the sake of the stimulating properties which it possesses, and if the consumer is to get the full stimulating benefit, as well as the mere feeding value, of a cup of cocoa, he must use several times as much of the cheap mixture as he would of pure cocoa; so that he does not gain in the end, but pays for sugar that he could just as well add himself, and for starch which is not more nutritious than bread.

These starchy mixtures of course produce a much thicker beverage than pure cocoa, as well as a much sweeter one, and no doubt for this reason mixtures are relished by many persons, but, as has been already said, it appears desirable, from a dietetic point of view, that some more precise information should be given on the labels as to the proportion of actual cocoa present than is provided by the mere statement that the cocoa is "combined with other ingredients, the purity and wholesomeness of which are guaranteed in accordance with the Act of Parliament," or similar inscriptions.

The best mixtures were two samples representing a well-known make of mixed cocoa, consisted of 50 per cent. of cocoa, from which none of the original cocoa butter had been removed, the remainder being sugar and starch (arrowroot) in equal parts.

Six more samples, representing other makes, contained not more than 40 per cent. of cocoa, partly deprived of its fat, the remaining 60 per cent. being sugar and starch.

One sample contained not more than 35 per cent. of cocoa, two samples not more than 30 per cent. of cocoa, and



two not more than 25 per cent., while five samples contained only 20 per cent. of cocoa, or less, the remainder of the sample in every case consisting of sugar and starch in about equal proportions.

With a few exceptions, the cocoa present was partly deprived of its fat, though in some few cases the whole of the original cocoa butter was present. This, however, seems to be the exception and not the rule, although one plea put forward for the manufacture of cocoa mixtures in preference to real cocoa is that the admixture of sugar and starch obviates the necessity of removing part of the original fat.

From the foregoing remarks, it will be seen that in the case of cocoa mixtures, it is necessary to purchase from 2 to 5 lbs. of the mixture, according to quality, in order to obtain 1 lb. of real cocoa—a fact which should be borne in mind in comparing prices.

It would obviously be improper in this report to refer to the names of the makers of any of the cocoas, either pure or mixed, comprised in the 27 samples submitted to me.

The total number of samples of food of all kinds analysed during the quarter, as has been already said, was 86, of which 24 samples were not of the nature, substance and quality of the article demanded.

I am informed that in the case of the sample of mustard, containing 12 per cent. of wheaten flour, the vendor was prosecuted, and duly convicted of a breach of the law. In two other cases, however, where proceedings were taken, I learn from the chief constable that one of the summonses was dismissed on the ground of alleged informality in my certificate. The Schedule to the Sale of Food and Drugs Act directs that the analyst shall declare his opinion that the sample contains "the parts as under, or the percentages of foreign ingredients as under, viz." In the case of this certificate, I accordingly declared "*the percentage of foreign ingredients as under, viz.: 6 per cent. of wheaten flour.*" The solicitor for the defence took objection on the ground that my certificate, in stating the presence of 6 per cent. of wheaten flour, should have also stated the presence of the remainder, namely, 94 per cent. of mustard, relying on a late, somewhat complicated judgment by Messrs. Justices Hawkins and Kennedy, having reference to milk, and to the fact that water, when present in milk, is not in the true sense of the term a "foreign ingredient," seeing that milk already contains some water natural and proper to itself.

I am of opinion, and the Council of the Society of Public Analysts, which has very carefully considered this matter since the said judgment, is also of opinion, that in the case of an entirely foreign ingredient, such as wheaten flour in mustard, such a certificate as I gave not only fully complies with the law, but is also compatible with the ruling in the judgment referred to.

The solicitor further objected to my not having made a statement based upon the supposition that mustard was a perishable article. Mustard is not a perishable article; and this contention could scarcely have been seriously intended; but the prosecuting inspector had not the advantage of legal assistance, and so the matter was not fully argued, and the way in which it was presented to the Court led the Bench, presumably, to give the defendant the benefit of any doubt that might exist, and the summons was dismissed. The second summons for a similar offence was, following this decision, withdrawn.

I have dealt with the matter somewhat more fully in a letter addressed to Mr. Holmes, the chief constable of the county, of which the following is a copy. I embody it here, as I should like it to stand as part of my present report.

"Analytical Laboratory,  
"17, Great Tower-street, London, E.C.,  
"3rd July, 1896.

"Dear Mr. Holmes,—It is a matter of regret that the two Loughborough mustard cases should have been dismissed on a merely technical ground on the form of the certificates.

"I am, notwithstanding the decision of the magistrates,

but with due respect to their judgment, of opinion that my certificates were perfectly sound and in legal form. They are certainly in accord with the schedule, and I am of opinion that they are not out of harmony, even with the recent judgment of Messrs. Justices Hawkins and Kennedy.

"Those judgments which are admittedly obscure, applied to milk, an article in itself partly composed of water and partly of solid matters, and the question at issue in a milk prosecution is as to the presence of water over and above the natural water of milk.

"Now wheaten flour, as regards mustard, is a foreign ingredient. Pure mustard contains no wheaten flour at all. Any wheaten flour at all, even 1 per cent., is a foreign ingredient. The schedule says the analyst's certificate shall state his opinion that the sample contained 'parts as under' or 'percentages of foreign ingredients as under.' I gave the latter quite explicitly.

"The Council of the Society of Public Analysts (not, of course, a legal tribunal) holds that this, in full view of the judgments referred to, is a sufficient certificate.

"But it is, of course, for the court before whom a case is tried to interpret both the law and the bearing of cases that have previously been decided, and the matter has become so legally complicated by various decisions that different magistrates, not inexcusably, sometimes take different views.

"It is at any rate obvious that the omission of the statement of the percentage of mustard could in no conceivable way prejudice the defendants, and the certificates would neither have gained nor lost in meaning or clearness by a statement of the percentage of pure mustard as well as of the wheaten flour. But, of course, in deference to the opinion of the magistrates expressed at Loughborough, I will take care to supply all such percentages in future.

"As to the contention that mustard is an article 'liable to decomposition' in the sense of the schedule, that is absolutely untenable. Even if it became mouldy, its decomposition would not interfere with the results of analysis. Had such a thing been possible, I have course would have made the statement demanded by law. In a remote or ultimate sense, all articles of food are of course liable to decomposition, but the provision in the schedule is clearly meant to refer to perishable articles like milk and butter, which are specified as instances, not to non-perishable things like mustard or coffee.

"Of course, the Court is placed in a difficulty when a defendant raises ingenious technical objections, and has for the first time to decide whether a certain clause may convey some hitherto unsuspected meaning.

"If these certificates had borne the statement as to no charge having taken place, etc., I have very little doubt that the solicitor for the defence would have argued that as mustard was not liable to decomposition, the words were superfluous, and therefore contrary to the schedule, and that the certificates were invalid on that account. The objection would be quite as good as that made to the omission.

"While I consider it to be my official duty to accept the ruling of the magistrates, and to conform with it in future certificates, I hope I shall not be considered as over-stepping the privileges of my office in thus commenting on the cases in question, and even in venturing to express my own unaltered opinion that my certificates were nevertheless sound and in accordance with the letter as well as the spirit of the Act.

"It is earnestly to be hoped that the new Act for which we are hoping will remove some of the technical perplexities which so often vex all concerned—magistrates, advocates, local authorities, and analysts alike.—Yours very truly,

"BERNARD DYER.

"E. Holmes, Esq., Chief Constable."

#### FERTILISERS AND FEEDING STUFFS ACT.

I have to report that under this Act no samples have been officially submitted to me from the county, in my capacity as district agricultural analyst, during the quarter. I

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have, however, received from a member of the County Agricultural Society two samples of so-called manure, sold in the county in one case at £5 10s. per ton, and in the other at £4 per ton (purchaser to pay carriage) to which I am glad to take an early opportunity of calling public attention.

This so-called manure in both cases proved to be worth, at the most, but a few shillings a ton. It contained only 1 per cent. of phosphate of lime, and a very small fraction of ammonia, and contained little of any appreciable value except a little sulphate of lime. For most land, it would have been scarcely worth a farmer's while to pay carriage and cartage on the material.

In one case, I understand, it was sold as "bone compound," and in the other simply as "manure." In the former, case the name was a misdescription, and in the latter, if not also in the former, the vendor broke the Act of Parliament which prescribes that the invoice shall contain a statement of the percentages of the various fertilising ingredients present.

The sale of the manure at either £5 10s. or £4 per ton was a gross fraud upon the farmer, and I considered it my duty to advise my client to take steps to place the matter in the hands of the local inspector, in order that the vendor might be dealt with under the Fertilisers and Feeding Stuffs Act, placing him in possession of the necessary particulars, but I have not heard that any further steps were taken in the matter.

I have the honour to be, gentlemen,

Your obedient servant,

July 22nd, 1896.

BERNARD DYER.

#### MILK.

At Marylebone, on August 6, a summons was heard by Mr. Plowden, in which Leonard Froud, of Childrey, near Wantage, Berks, was charged with selling, to the prejudice of the purchaser, milk which contained 12 per cent. of added water.—Mr. Low, barrister, was for the defence.—Mr. Dinnis, solicitor, who prosecuted for the Paddington Vestry, called evidence that on July 7, upon the defendant's milk arriving by train at Paddington Station, a sample was taken which was subsequently submitted to the public analyst. That gentleman having analysed it twice, certified it to contain at least 12 per cent. of added water.—Mr. Low, in submitting the defence, contended that notwithstanding scientific evidence had been called, it was sufficient for his client to declare on oath that the milk was not tampered with while in his possession, in order to obtain judgment in his favour. Mr. Froud kept but a few cows, which he milked himself. The process of cooling, churning, and delivering the milk at the railway station at Wantage was entirely under his supervision, and up to that point he would swear to its not being adulterated.—The defendant having given evidence on oath to this effect, Mr. Plowden said this case was an illustration of the old struggle that had gone on and would ever go on when a Court had to decide between a fact on one side and opinion on the other. The issue was whether the defendant had committed perjury or Mr. Stokes was infallible. He had no reason to believe the former, and therefore dismissed the summons.

At Wolverhampton Police Court, on August 5, Frederick William Bailey (30), of Regent-street, Woodsetton, appeared to a summons taken out by Mr. H. Van Tromp (the county inspector under the Food and Drugs Act) for selling adulterated milk. The evidence showed that the milk purchased from the defendant contained 10 per cent. of added water. A fine of £5 and the costs was imposed.—Edward Baker (40), of Himley-road, Lower Gornal, for selling milk containing 7 per cent. of added water, was fined £5 and the costs. In this case the wife of the defendant argued that as it was a hot day the cows had been drinking heartily.—Elizabeth Cartwright (35), of The Straits, Lower Gornal, for selling milk containing 18 per cent. of added water, was fined £5 and the costs.—Benjamin Jeavons (78), of Regent-street, Woodsetton, for selling milk from which 36 per cent. of the original fat had been abstracted, was fined £6 and the costs. The last-named sample had been purchased as new milk.

At North London, William H. Burdon, of Allen-road, South Hornsey, appeared to an adjourned summons charging him with selling milk adulterated with 6 per cent. of added water. Mr. C. V. Young, who defended, submitted that there was no case, as the sample which he had submitted to the arbitrators at Somerset House could not be analysed because the air had got to it. He urged this point, because on a previous occasion, when the Hackney Vestry had summoned a man for adulteration, Somerset House had returned

it as unusually rich in fat. Mr. Bros adopted this view, and dismissed the summons on payment of 2s. costs.

ROBERT HUNT, of Well-street, Hackney, who had sold as butter an article in which analysis proved there was 37 per cent. of foreign fat, pleaded that in the cleaning of the shop the mixture had got with the pure and more expensive butter. He was ordered to pay costs.

MESSRS. STEVENS AND SON, of High-street, Homerton, appeared by Mr. Henry Stevens, for selling as milk an article which had been adulterated with 24 per cent. of water. The defendant said that the day on which the purchase was made was a very hot one, and his lad seeing that the milk had gone wrong, purchased from another dealer so as to serve his customers. He had sold his milk exactly as he got it from the wholesale dealer; and he got an affirmative reply when he asked the inspector if all previous samples taken had not been correct. This summons was dismissed on payment of the analyst's fee.

MESSRS. ABBOTT AND SON, of Digby-road, Homerton, were summoned for unlawfully causing to be consigned or delivered to Thomas Brooks, of Morning-lane, milk that had been adulterated with 6 per cent. of added water. Alfred Abbott answered the summons, and Mr. Ricketts defended. The summons was taken out because of a statement made in court in connection with a previous case. Mr. Ricketts contended that there was an informality in the taking of the sample (which Mr. Bros allowed), and he added that his clients had been in business 25 years, and never been convicted. The summons was dismissed on the technicality.

JAMES MARTIN, of Shacklewell-lane, was summoned for selling milk to which 8 per cent. of water was alleged to have been added. Mr. C. V. Young defended in this case, and urged the same contention that the hot weather had destroyed the possibility of taking a fair sample of milk. Dismissed.

THOMAS M. FAULKNER, of Shacklewell-lane, who was alleged to have sold milk adulterated with 9 per cent. of added water, was also defended by Mr. C. V. Young, who called Mr. De Hailes, public analyst, to dispute the certificate of the Hackney analyst. Mr. De Hailes showed that he used a different test to that of the Hackney analyst (Mr. Parker), but he admitted that the hot weather was rather against a fair test of milk. This also was dismissed.

JAMES CHANDLER, of Morning-lane, summoned for selling milk to which 20 per cent. of water had been added, said he had sold it as he had it from the wholesale dealer. He did a very small trade, and the milk he sold went through three different hands before reaching him. Mr. Bros. told the defendant that if he carried on the trade of a milkman he must see that his goods were pure. However, he appeared to be a poor old man, and now would only be fined 1s., and 2s. costs. The prisoner had no money to pay, and was allowed a few days in which to get it.

#### BATH AND MILK.

MARTHA WORNES, of 7, Northumberland-place, was summoned at Bath on August 7, for selling new milk which was not of the nature, quality and substance demanded, on the 22nd ult. Mr. F. H. Moger appeared to prosecute on behalf of the Sanitary Committee, the proceedings being taken under the Food and Drugs Act, 1875. Mr. E. B. Titley appeared for the defence. Henry Grahame Montagu, Inspector of Nuisances, said he visited the defendant's premises on the day in question and purchased one pint of new milk, dividing it into three parts in the usual way. The certificate was then put in, which showed that 24 per cent. of natural fat had been abstracted, and there had also been an addition of 5 per cent. of water. Witness was then cross-examined by Mr. Titley, when it was elicited that defendant, with her father and mother, had carried on the business for 20 years, in which time he had taken other samples, but this was the first charge that had resulted. He saw cream on the surface, but defendant stirred it up. By stirring it the cream would combine with the milk.—Mr. Gatehouse was then cross-examined. He stated that he had known milk come from the cow with as low a percentage as two per cent. of fat, but he did call it milk as undoubtedly the cow was diseased.—Mr. Titley then addressed the Bench at great length, contending that the analyst's evidence was not irresistible evidence, citing as an instance a case which was tried last February, in which the facts of the analyst's certificate were much grosser, and yet the case was dismissed. The evidence of experts might be contradicted by other experts, and so it was only opinion, whereas he



should bring forward actual evidence. There was no standard for milk binding upon them by Parliament. He contended that there was no water added to the milk, and that its poorness was due to the great drought, and he asked the magistrates to dismiss the case.—The defendant, who was sworn, said she noticed the milk was rather poor on the day in question, but she put it down to the drought. Witness also wrote to the farmer complaining of it. No cream had been taken from the milk, nor was any water added. The milk was received from Mr. Brown, of Odd Down. She accounted for its poorness also by her constantly dipping from it, there being only about three quarts left when the inspector called. William James Laver, employed by Mr. Brown, stated that he brought in the milk to the defendant's shop, on the 22nd, in a churn. There was nothing done to the milk while in his possession. Witness assisted in milking, but the milk was not tampered with in any way. He had noticed the milk looked very poor lately. Benjamin Cambert, also employed by Mr. Brown, said he superintended the milk on the day in question, and, to his knowledge, the milk was not tampered with. They did not make any butter last month. Emma Brown, also called, said the milk was not tampered with in any way. Mr. Gatehouse, recalled, said his experience was against the milk being affected by the drought in the way shown by the analysis. The magistrates could not decide that the case was made out, and it was therefore dismissed.

### THE FOOD AND DRUGS ACT AT THE PUBLIC HEALTH CONGRESS.

A PAPER on "Some drawbacks to the administration of the Food and Drugs Act" was read at Glasgow, on July 28, by Mr. W. J. Addiscott, chief sanitary inspector, and inspector under the Food and Drugs Acts, Plymouth. One drawback, he said, was the way in which the inspectors were appointed and paid. The question of paying the analyst by fee or by salary was one raised at the meetings before the Select Committee, and the opinion expressed was that fees were the most preferable, but the question of salary or fees for the inspectors who had to carry out the Act, and in many cases conduct their case before a justice, was not considered. As to their appointment, he considered it a grave defect that the procuring of samples was placed in the hands of the local inspectors without any pay or scarcely so. They heard of inspectors carrying out the Act for £10, £15 or even £5 per annum, which was an invitation to carry it out as little as possible. In some places the work was added to the inspector's duties without any remuneration at all above his salary as a sanitary inspector, so they often learned that that which cost nothing was worth about as much before very long. He would advocate the appointment of inspectors by the Local Government Board or the Board of Trade, these inspectors having the right to travel into any district where they considered fraud was being perpetrated, and should have the power to exchange districts, thus rendering the action of the inspector as legal in one part of the country as another. The inspector should also be a full-time man, with a salary sufficient to keep him above the suspicion of being bribed, as suggested by one gentleman at the Select Committee, but which he could not prove had been the case. He thought the Act should be made compulsory and not permissive. His conclusions were that a standard be incorporated in the Act; the procuring of samples in course of delivery to be extended to all articles of food; less time to elapse between the purchase and return of certificate; the appointment of travelling inspectors; analysts and inspectors to devote their whole time to the duty; a more simple procedure when purchasing; and the codification and unification of the whole question of law on food in one Act.

Mr. Addiscott was thanked for his interesting paper.

### SOMERSET HOUSE HASN'T A CHANCE.

At Pontypridd Police-court on Wednesday, the 5th inst., Thomas James, milk vendor, of Cymmer, Rhondda Valley, was charged before the stipendiary, by Supt. Jones, D.C.C., with having sold him milk deficient in cream to the extent of 16 per cent. Mr. James Phillips, solicitor, defended, and urged that the prosecution had failed to produce a certificate from Somerset House. The sample kept by the Inspector having been sent there by order of Justices, got broken in transit. The Bench said that the prosecution had done all they could in the matter and fined defendant £2 10s. including costs.

### THE LAW AND DISEASED PORK.

At the Guildhall Police-court, on August 8, Edgar Riley Prebble, C Avenue, Central Meat-market, was summoned before Mr. Alderman Davies, M.P., for being the owner of two sides of pork which were exposed for sale, the same being unfit for human food. Mr. Matthew Hare prosecuted on behalf of the Holborn Board of Works, and Mr. R. D. Muir (with whom was Mr. W. H. Lycester) defended. George T. Billing, a sanitary inspector to the Holborn Board of Works, stated that on the morning of Saturday, June 6, he saw two sides of pork taken to 101, Charterhouse-street. As soon as they were placed on the shop-board he seized them. The meat was in a diseased condition; it was soft, wet, and inflamed; it was green in several parts, and emitted a horrible smell. After the medical authority had examined it, it was condemned by Mr. H. Smith, the Magistrate at Clerkenwell Police-court. Dr. W. A. Bond, medical officer for Holborn, deposed that he saw this pork on the morning of the seizure. It was not only unfit for human food, but it would be most dangerous for anyone to eat it. The pig had suffered from fever of some kind. John Harrington, a butcher, of 101, Charterhouse-street, said on the morning in question he bought a chopped pig from the defendants, and gave 1s. 8d. per stone for it. The Alderman: What! That is 2½d. a pound. Mr. Hare: We think perhaps that was a fair price.—The Alderman: I grow pigs, but I should not like to sell pork at that price.—Witness, continuing, said the defendant asked 2s. 4d. per stone, but witness would only give him 1s. 8d.—The Alderman: That is a great drop.—Some other evidence having been given, Mr. Lycester took certain legal objections to the prosecution, and then said he should show that the defendant had no knowledge that the meat was bad.—Mr. Prebble was then sworn, and denied that he was aware of the state of the meat.—Chief Inspector Terrett (Central Meat Market): stated that the defendant's firm was one of the most respectable in the market.—The Alderman remarked that he found as facts that this pork was intended for the food of man, and was deposited at 101, Charterhouse-street for sale, that it was diseased and unfit for food when seized, and that when sold by Prebble to Harrington it was diseased. It was found in Harrington's possession, and was purchased by him for food. The defendant was not the person to whom it at any time belonged—it was not found in his possession or on his premises. The defendant had reason to believe, and did in fact know, that the meat when sold was unfit for food. The original summons was under sub-section 3, but that was withdrawn, and this present one was taken out under sub-section 2. If the case had been proceeded with under sub-section 3, and Harrington, the defendant, and the man who sent him the meat had been brought before him, he would have punished them to the fullest extent. But as things stood, he had no option but to dismiss this summons.

### THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

*(Continued from page 383.)*

WE must take the people as they are; that is to say, often without intelligence, thoughtless, and also careless. If all men were careful there would be no need for an accident insurance law; but, also, "careful consumers" are not always careful, and all accidents cannot be foreseen. There is also sometimes a warning in the Commission—from Professor Sell and Professor Knapp when they protected the Zurich regulations against the attacks of Schütte (page 35 to 38). Professor Knapp pointed out that in these regulations "the natural points of view had been taken into consideration." They were based upon the trials of Professor Victor Meyer, "an excellent observer." Because in its use the oil can take a temperature of 87°-80° F., for the safety they added 5°-4° F., and thus they came in Zurich upon 93°-2° F., flash point. As is seen, quite simple and logical. And Knapp still adds—"One must not therefore choose the critical temperature too low, otherwise the purpose of the Board of Health is missed."

Mr Schütte exaggerates and appears comical. He exclaims—"They mention in Zurich the highest occurring room temperature at 78° 8° F. Yes, gentle-



men, we sit here from 4 to 5 hours. If we had here 78° 8' F. we wouldn't stand it five minutes. I cannot imagine a room temperature of 78° 8' F. possible with a normally constituted man. The highest room temperature which I can imagine is 70 to 72° F., etc."

In the above I have discussed that which is most important for my purpose in the debates. In this report of the sittings we find again in all cases for the most part premises originating in America, and from Redwood, which led to the low test of 69° 8' F., premises which, as we know now, and as the great number of accidents prove, are entirely, or partly, false.

3. Memorandum and Appendix.—From the 3rd section of the "Memorial" and the "Appendix" handed over to the Reichstag, the standpoint, invariable but at that time excusable, which the Board of Health took up in this question comes forth distinctly, namely, to take into consideration only the danger of explosion of the petroleum burning in lamps, and not its direct danger of fire. A great number of experiments were made, "whereby, according to the Appendix, it has been proved" that oil, which at the temperature under 68° 0' F. in the Abel apparatus allows inflammable vapours to escape, "does not exclude sufficiently the danger of an explosion," independent of the unfavourable influences of certain lamp constructions. On account of the influence of the height of the barometer, which differs greatly in different parts of Germany, 1° C. was added. One can therefore turn the sentence round: oil of an Abel test over 69° 8' F., except in a few lamps of a certain construction, excludes sufficiently the danger of an explosion. Yet I think that that is not sufficiently clear from pages 24 and 25 of the "Appendix," where there is a report of experiments with the purposely inflamed vapour mixtures, and where it says, "Oils of over 69° 8' F. to 75° 2' F. (Abel) give at lower temperatures (68° 0' F. of air), it is true, milder reactions, but with raised warmth even with 73° 4' F. to 75° 2' F., and still more at 86° 0' F., the reaction was so violent that the flame went out." The lamps were provided with movable rings, therefore arranged in such a way that conditions of "danger by explosion" were excluded. Such is in reality not the case; the lamps are then almost entirely closed. Thus, in a case personally known to me a violent explosion happened, on a winter evening, in a glass lamp which had been burning for five or six hours, which was probably caused by the turning over of a newspaper leaf, and where the whole burner, besides the burning oil, was scattered about the room; fortunately, the glass receptacle was so strong that it did not burst, but the thread of the screw had given way. The construction of the lamp didn't show anything special; probably the wick was too small, so that the vapour mixture had admittance to the flame.

The further consideration of the contents of the Appendix does not offer much interest now, because a publication of the Test Commission of 1893, which speaks about the construction of lamps, begins to point out that of the accidents with petroleum at most 1 per cent. are caused by lamp explosions. Still a little more from the last pages, 26 to 29, where the argument led to the flash point of 69° 8' F. is given more shortly. "The dangers to be removed," it says, "have, it is true, in the first place, their cause in the composition of petroleum," yet other side circumstances come into play which arise from the way of treatment, that is to say, construction of the burner and the treatment of the lamps. Dr. Struck says further that these evils are to be avoided by admitting oils of considerably higher test. "But such oils, as they consist chiefly of the best and heavier burning oils, parts of the raw petroleum, are considerably dearer than the first named, and demand quite a special lamp construction, as they, on account of their low capillary action, rise less readily in the wick."

It follows from this sentence that the Board of Health, in the months which has passed since the

meeting of the Commission, has not had the thought to carry out a complete fractionating experiment with the Standard Oil, No. 1, by far the most used. If that had been done its standpoint would no doubt have been different. It would have been found out, firstly, that this oil of 71° 6' F. to 75° 2' F. needs to be deprived only of 6 to 7 per cent. volatile parts in order to raise the flash point to about 104° 0' F., and that the difference of price needs also to amount to at most 6 or 7 per cent.; secondly, that the remaining oil of a specific weight of about 0·8 (specially distilled or discoloured with bone charcoal) burns in ordinary lamps just as well as the original, and that, therefore, the thick oils present do not exercise either any disadvantageous influence (see below). But now it was prohibited to look for "a way out of the difficulty." I suppose it would be inevitable that the choice would then be arbitrary. It depends upon the trials considering the explosive danger of lamps. The "dangerous temperature" lies about 18° 0' F. (later in the regulations about 14° 4' F.) over the Abel test. The temperature rises in burning lamps, with 66° 2' F. to 68° 0' F. air temperature 9° 0' F. over this latter, with raised temperature of the surroundings on the average only about 3° 6' F. And then it says: "It will, therefore, depend upon fixing what quality an oil must be so that it may not develop very dangerous vapours even at an air temperature raised to from 86° 0' F. to 95° 0' F." That would be quite right. If one looks now from this standpoint, which takes into consideration only the danger of explosion, and if one acts according to the rule given in this sentence, then I calculate for an air temperature of 86° 0' to 95° 0' F. (that is 89° 6' F. to 98° 6' F. in the oil), a flash point of at least 95° 0' F., or, in order to be safer, 98° 6' F. Professor Victor Meyer has, as mentioned before, arrived at 93° 2' F. In many metal lamps and stoves in use now the raising of temperature is mostly far greater than 9° 0' F.

"But now experiments have also taught," it goes on, "that oils from 57° 2' F. to 66° 2' F. (Abel) are very dangerous and therefore unsuitable." Therefore, Dr. Struck concludes with the following:—"According to the aforesaid considerations, I hold, in consequence of the deliberations between Professor Weber and myself and agreeing with him, in my opinion, that 68° 0' F. should become the legal test." Considering the differences of the barometer, an additional 1° 8' F. has been accepted. But why not the justly calculated number 95° 0' F. or 98° 6' F.? Or has, in these deliberations, also "the pressing wish" been considered, but which has not, as it is said, been expressed by the Commission, but almost solely by the representatives of the trade, that the limit for Germany might not be drawn as closely as in Great Britain, rather a lowering of the lowest flash point admitted there should be considered." One thing is clear here, that in the settling of this question, which is not a commercial question at all, but merely a moral and scientific one, the manufacturers have succeeded by exaggerated or false representations in obtaining their egotistical purpose. And thus one may ask, Will there not be at the present moment many experts who, after closer consideration, consider the fixing this low test of 69° 8' F. as a victory for the Standard Oil Company?

4—Directions, etc.—The "Directions" of 1883 do not contain much of interest for our purpose. The Normal Standards Commission, which publishes them, stands also on the same standpoint as the Board of Health, which could be understood at that time, namely, that it considers exclusively the danger of explosion. It quotes the sentence—"The examination of petroleum as regards its danger of fire and explosion ought, therefore, to be chiefly directed against this formation of vapours (in lamps)." And page 66—"The under-test petroleum was the principal cause of the explosions which have occurred hitherto."

(To be continued.)



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## Food and Sanitation.

SATURDAY, AUGUST 22ND, 1896.

### PRESERVATIVES IN MILK.

MR. ARTHUR ROBOTOM, well known the world over for his connection with borax, takes Dr. Stevenson to task about that article. In an interview with a member of the *Daily Mail* staff, Mr. Robotom stated that he took the liberty of differing from Dr. Stevenson, and that he thought the recent conviction of John Waters milk dealer, was a wrongful one. His reasons are:—

I am to-day seventy-two years of age, and I have been engaged in the borax trade since the age of nineteen. I

made £900 out of it before I was twenty, and I don't hesitate to say that to this particular trade article I have paid more attention than anybody in the world. By the age of twenty-five I had made a fortune out of borax, together with paraffin oil, and I bought a colliery with the proceeds. I have been to every place in the world where borax is to be found, including California, Nevada, Tuscany, Asia Minor, Bolivia, Chili, and Peru, and I am proud to say it was I who first discovered the antiseptic value of borax. It was a most romantic affair. I was prospecting for borax near Death Valley, in Arizona, for although at that time the medical value of borax was unknown, it was in demand for glazing earthenware and other trade purposes. I had another man with me, and we were dropping with thirst. We separated to search for moisture. I came across

### A DEAD HORSE

lying upon the crude borax deposits. I cut it open and moistened my lips with its blood, and to my consternation found its blood and flesh quite sweet. It had been preserved by the borax. You will find this incident set out at length in "Travels in Search of New Trade Products." After my recovery I related the incident. It got into the papers, and this led to an investigation of the preservative properties of borax by the American medical men first, and then by the profession in Germany and other parts of the Continent. I believe it was Professor Lister who had the honour of first introducing boracic acid to the medical profession of this country; and although all medical men nowadays have more or less knowledge of it, the trade in borax and boracic acid is yet in its infancy, although the consumption of it has risen from 3,000 tons per annum, when I was first in the trade, up to 47,000 tons per annum at present.

And now, to return to this milkman's conviction,

### IT IS WRONG,

a mistake of an unenlightened age, so far as this particular product goes. I strongly advise all milk dealers to use pure borax in preference to boracic acid.

"But wasn't there too much in this particular milkman's milk?"—"No, no. For forty years now I have three times a day taken a piece of borax as big as a pea, and for that entire forty years I have never had a single day's illness, nor complaint of any kind. Others have had similar, if less extended, experiences. All I can say is that Dr. Stevenson's ideas of the excessive use of borax differ from mine, and I think I know more about it than he. I don't know the milkman, of course, but I regard him as the victim of a wrongful conviction."

There is some incompleteness about Mr. Robotom's reasoning as conveyed to the public through the *Daily Mail*. Naturally enough, as his business is to sell borax, Mr. Robotom is indignant that people should exist who object to it in milk, and he is proud that he eats three times per day a piece as big as a pea, and can boast of having performed the feat for forty years. We remember that Dickens once described an obstinate old gentleman who was taken very ill and sent for a doctor.

"Wot's the matter?" says the doctor. "Wery ill," says the patient. "Wot have you been a eatin' on?" says the doctor. "Roast weal," says the patient. "Wot's the last thing you devoured?" says the doctor. "Crumpets," says the patient. "That's it," says the doctor. "I'll send you a box of pills directly, and don't you never take no more of 'em," he says. "No more o' wot?" says the patient—"Pills?" "No; crumpets," says the doctor. "Wy?" says the patient, starting up in bed; "I've eat four crumpets every night for fifteen year on principle." "Well, then, you'd better leave 'em off, on principle," says the doctor. "Crumpets is wholesome, sir," says the patient. "Crumpets is not wholesome, sir," says the doctor, wery fierce.

Now, this prototype of Mr. Robotom next morning got up, had a fire lit, ordered in 3s. worth of crumpets, toasted them all, ate them all, and blew his brains out; all "in support of his great principle that crumpets was wholesome, and that he wouldn't be put out of his way for nobody."

Mr. Robotom is no ordinary man, and he has done a great deal for his fellow man, as well as for himself. A recent writer, describing the Death Valley, says:—

Probably no other region on the face of the earth so



nearly fulfils Dante's picture of the Inferno as Death Valley. The air, raised to furnace heat by its passage over the deserts, is kiln-dried in this pit below the sea-level, till the percentage of moisture left is at times said to be less than one. Yet in spite of the fact that air in which the moisture is only from 30 to 40 per cent. is positively dangerous to health, it was in this region that men had the hardihood to pursue their investigations, until they discovered the borax which has been found so widely useful in medicine, in the household and in the industrial arts.

As indicating the conditions which prevail in this sombre region, which space will not permit to describe in detail, it may be said that workmen employed there sleep in the running water with their heads on stones; furniture is destroyed in a few days; tables are warped into curious shapes, chairs fall apart; water barrels left empty lose their hoops in an hour; one end of a blanket, whilst being washed, is found to have dried while the other is manipulated in the tub; a handkerchief taken from the tub and held up before the sun dries in a flash, more quickly than it would have done before a red-hot stove; meat killed at night and cooked at six the next morning spoils before nine; eggs are roasted in the sand; men go insane from the intense heat and wander off into the uninhabited desert. The story is told of one man, who, while riding with a canteen in his hand, on top of a load of borax, fell over and died. "He was that parched," said the veracious eye witness, "that his head cracked open over the top." Yet during the winter the mercury sometimes freezes and the temperature sinks to 50 degrees below zero.

We are sorry to find Mr. Robottom, in the evening of his stirring, eventful, and useful life, emulating Sam Weller's "crumpets on principle gentleman," because it is unfortunately the fact that the general public have no knowledge of the extent to which the surreptitious drugging of articles of food is carried on. In Birmingham during the past few weeks samples of milk, taken for analysis by Mr. Jones, Food and Drugs Act Inspector, and analysed by Dr. Alfred Hill, F.I.C., Medical Officer of Health, disclosed the fact that one had 70 grains of boric acid per gallon, another 35 grains per gallon, and seven June samples had 20, 10, 25, 15, 30, 60, and 15 grains of boric acid respectively per gallon. When we consider the truth that typical infants' foods like Mellin's require to be made up with milk, and that, utterly unknown to their parents, infants are thus dosed with drugs, we can well realise how very dangerous Mr. Robottom's advice is. He may be able to take pieces of borax as big as a pea with impunity, and that is by no means improbable, because we not long ago had the interesting record of a person known as the "Human Ostrich," who ate tinnacks, broken glass, iron nails, etc.; but mankind generally would find a similar diet rather killing. Mr. Robottom's own experiences in Death Valley, and elsewhere, show that he takes a deal of killing. A dose of a drug that would be harmless to a man of thirty years of age can have a different effect upon an infant a few days old. Mr. Robottom's principle may therefore suit him, but it doesn't follow that it will suit humanity at large. There are many millions of men, women, and children, but there are no two absolutely alike in what can be plainest seen—their features. What an absurdity it is, therefore, of Mr. Robottom to assert that they are alike in their ability to withstand, in identically the same manner, the application of a drug! The common mussel is death to one, and a skin eruption to another, whilst to a third it is felt to be a stimulating and nourishing delicacy. A crab is one man's meat and another man's poison. Borax may benefit Mr. Robottom, but it may have a very different effect upon others, and in any case the use of any preservative in milk is open to grave objections, seeing that milk is the main food of infants. The rapidly increasing use of various preservatives must soon compel medical men to absolutely prohibit any infants' food that require to be made up with milk, and to demand that the Legislature shall sternly repress the surreptitious drugging now practised by milkmen, butchers, bacon dealers, butter factors, etc. Experiment and experience are

both teaching that artificial infants' foods are not properly adapted for infant nutrition.

"In the New York Infant Asylum," says the *Chicago Medical Times*, "all the varieties of artificial infant food have been tried. While some children are benefited by certain foods for a short time all must have a change, and but few induce a gain in weight, health and strength. The conclusions are that cows' milk, properly adapted, is by far the best food, and, in fact, the only food generally reliable."

The great importance, therefore, of regulations being made that cows' milk shall run no risk of contamination or drugging in any way cannot be too strongly insisted upon.

#### EXCESS WATER IN BUTTER: A WARNING.

WE differed from Mr. R. Gibson, Limerick, at the time of the Manchester prosecutions for excess water in butter, so we are pleased to find that gentleman has at last not only come round to our way of thinking, but has even adopted our phraseology in condemning the practice. Writing to our contemporary *The Farmers' Gazette*, Dublin, Mr. Gibson says:—

"England's need is Ireland's opportunity," has often been said. England now needs (for nearly twenty years past never needed so much at this time of year) an immense quantity of the very choicest centrifugal butter. Will you grasp the opportunity like men, or let it slip, as Irishmen have too often let their grandest opportunities slip? Will you redress the wrongs under which this our chief industry has so long groaned?

They may be classed under three heads—ignorance, neglect, roguery. Ignorance of the modern methods of butter-making is now quite inexcusable, as teachers can be had free on application to Professor Carroll, Glasnevin, or Mr. Smith, Munster Dairy School.

Neglect in any detail is intolerable where not only the individual's, but the whole country's, reputation is at stake. Neglect of cleanliness in milking, in milk vessels, in churning, or in packages is disgraceful and a wicked wrong. Roguery of any sort, and particularly the roguery that is, I regret to say, becoming rampant—that of sending out as creamery butter blends of ordinary lumps—should be put down with a high hand. It is wicked folly, for it will recoil on the whole trade, as well as on the guilty parties, if not put a stop to. It is the grossest breach of the Merchandise Marks Act. *The roguery of intentionally making water stand upright by the aid of some butter, and selling it as butter, is of much too frequent occurrence.* This is a wrong we should all determine to redress; but unfortunately it is a roguery which is aided and abetted by many English buyers, who are satisfied to take it so long as they can get a low-priced article.

Only yesterday I had a lot supposed to be creamery butter, the firmest of which showed on analysis no less than 22.05 moisture, and from its appearance, and its behaviour while being analysed, there is no doubt that the water being there was no accident, but that it was deliberately forced into the butter. Needless to say, it did not sell here, but unfortunately that is not an isolated instance, and it evidently sells somewhere, or it would not be made. There is absolutely no excuse for excessive moisture during recent weather. Accidents will happen in churning, but anyone who knows his business can at once tell the difference between added water and moisture the result of ignorance or accident. England needs a very large supply of choicest creamery butter at present. Denmark is failing her, as pastures are bare and cattle are nearly all being foddered. Home supplies are failing, as English pastures are bare, and they don't know how to fodder properly to secure milk. Colonial supplies are failing, as butter is dearer in Australia than in England, owing to the death of hundreds of thousands of cattle from "tick fever," particularly in Queensland. Are you going to grasp the opportunity and regain your old prestige as the best butter makers in the world? You have the climate, the soil, and the cattle; you only require the will to drop roguery and carelessness. Grasp the present opportunity; you may not see a similar one for a generation.

Better late than never, we say, but it would have been better still had Mr. Gibson joined us three years ago in condemning the practice, instead of defending it. We then said what Mr. Gibson now says, that



"the roguery of making water stand upright, and selling it as butter," would be sure to recoil on the good repute and injure the trade in Irish butter. If we had a Government composed of sensible practical men, steps would long ago have been taken to foster and organise English and Irish dairy farming on Danish lines.

### INFANTS' FOODS.

THE *Imperial Health Manual* of the Health Department of Germany says:—

"The most frequent illnesses of the first year of childhood are caused by improper nourishment. Many mothers cannot, others will not, suckle their children, whether from motives of health or gain, or, as often happens, from no morally justifiable cause. It is possible for only a few parents in such cases to provide a complete substitute for a wet-nurse; the greater majority of these children are entirely deprived of their natural nutriment—mother's milk. The milk of the cow or other animals forms their chief food; this is most suitable for them next to mother's milk, but it should be kept free from any impurities, thinned before being used, mixed with sugar, and well boiled. Ignorant mothers who wish to provide their infants with strong nourishment in the shape of pure, or little-diluted milk, often cause the infant stomach, inflamed by the heavy diet, to partially reject the food offered to it, and sometimes severe disorders of the digestive organs are the result. Many children thrive well if they receive preserved milk along with, or in place of, fresh milk. Similarly, well-boiled and thoroughly-strained broth made from oats, barley, and other cereals may be given to children more than three months old as an adjunct to milk; still, it must not be forgotten that the nutritive qualities of such broths are far inferior to those of milk. Too premature attempts to nourish children on adult diet is almost certain to be punished by severe digestive disorders. The dreaded vomiting fits of infancy are frequently the result of neglect of cleanliness in storing and handling milk supplies; hence they cause more deaths among children fed on animal milk or farinaceous substitutes for mother's milk than among infants fed at the mother's breast. Light biscuits are usually eaten without injury by children in the last quarter of their first year, and soft-boiled eggs at the expiration of that year. Many children learn to assimilate easily-digestible meat in the course of their second year, but in general it should be given to them only towards the end of that year. Similarly, light vegetables, potatoes, and fruit are best reserved for the last-mentioned period. Subsequently, children easily accustom themselves to a diet increasing in strength; still, food difficult to digest, or strongly-spiced dishes and alcoholic liquors, should be entirely withheld from them. Pampering children with sweetmeats and other dainties is a bad habit, which not only injures their rearing, but also undermines their health by leading to teeth diseases and digestive disorders."

### THE FANCY BREAD QUESTION.

THE London master bakers have had a conference on this question. Mr. W. Neave Hill said there had been numerous prosecutions lately of London bakers for selling what was alleged to be "short-weight" bread. Such bread was always sold as "fancy" bread. There was no true definition of the term "fancy" bread. Several judges had disagreed on the point, the most reasonable interpretation being put forward by Mr. d'Eyncourt, the police magistrate, who said that "fancy" bread was bread made of a superior flour to that used by the baker in the ordinary batch, or in which a more expensive method of fermentation had been used. Mr. Haydon and Mr. Spencer, of the Public Control Department of the London County

Council, both suggested that the bakers should agree that "fancy" bread should be a loaf that was under 1lb. in weight, and that all other bread should be weighed at the time of delivery. A large number of bakers had waited on Mr. Haydon and Mr. Spencer, and eventually the weight was raised to 1½lbs., so that a loaf under that weight should be called fancy bread. A resolution pledging the meeting to accept the arrangements arrived at with the County Council, and expressing the opinion "that the Bread Act be amended by striking out the words "all bread shall be sold by weight, except French and fancy bread and rolls," and that in their place be inserted the words, "a quartern loaf shall be called a 4-lb. loaf, and a half-quartern loaf a 2-lb. loaf," was carried.

### A WARNING ABOUT KOLA.

THE craze for kola that has taken so many forms is one that has its dangerous side. Kola is used as a stimulant, and finds its way into wines, aerated drinks, cocoas, etc. A writer in the *North American Journal* calls attention to the fact that a note of warning has been sounded as to the use of the kola nut by physicians in general, and the indiscriminate use of the same by those who would temporarily increase their strength even at the expense of a profound constitutional weakness. It seems to be a fact that while these different stimulants like tea, coffee, cinchona, and coca, and last but not least the kola nut, may seem to produce little or no deleterious effect upon the African and South American Indian, the last mentioned is death to the white race in general, and more especially to that branch of the white race whose nervous system is most highly developed. Kola, like coca, has been heralded far and wide as a muscular stimulant, entirely devoid of deleterious effects, but the truth is that carelessly used it is a viper whose sting is death.

### THE COMPOSITION OF SELF-RAISING FLOUR.

RECENT years have seen a great increase in the sale of what is called self-raising flour. An analysis made of a sample of this kind of flour at Liverpool, some weeks ago, contained 25 grains of alum per pound of flour. Traders should therefore be on their guard when dealing in this article, as its sale may cause them trouble, expense, and loss of good repute.

### SELF-RAISING FLOUR AND ALUM.

AT Liverpool, on August 5, Messrs. Trollip and Smith, 3, Stuart-road, Walton, grocers and provision dealers, appeared in answer to an adjourned summons charging them with having sold, to the prejudice of the purchaser, some "self-raising flour" which was not of the nature, substance, and quality demanded. Mr. Cripps conducted the prosecution, and Mr. Horridge, barrister, appeared for the defendants. Inspector Baker purchased a packet of the article in question, and the public analyst certified that it contained upwards of 25 grains of alum and 32 grains of bicarbonate of soda per pound. The analyst, Mr. W. Collingwood Williams, wrote on the certificate—"The alum and bicarbonate of soda are added for the purpose of causing the dough to rise by generating carbonic acid gas. The alum renders the flour less wholesome, and its use is unnecessary—very unusual and very objectionable." Mr. Cripps submitted that the case came within the category of bread containing alum and mustard containing flour, and preserved peas containing sulphate of copper.—Mr. Horridge contended that this was not a case of adulteration at all, and that the purchaser obtained what he asked for.—Mr. Stewart held that there was no case at all against the defendants. The stuff was a chemically prepared composition, and therefore there was no case. The Stipendiary suggested



that in the future the analyst should not put any observations of his own on the certificate. The case was dismissed.—We understand the prosecution intend to appeal.

### THE "WEEKLY SUN" MENDS ITS WAYS.

THE *Weekly Sun* announces: "No medical questions will in future be answered in the *Weekly Sun*."

It would be to the advantage of the public if *The Echo* would follow this example.

### ON WHITE WINE VINEGAR.

BY ALFRED H. ALLEN, F.I.C.

(Past President of the Society of Public Analysts, etc.).

AT the recent Pharmaceutical Congress, Mr. Allen contributed the following paper:—

The perversion of words from their original meaning often troubles the philologist, especially if he be one of those inclined to appeal on every occasion to the origin of the word for an interpretation of its present signification. The perversion of the original meaning of the words "prevent" and "geometry" are notable instances of this change in signification; but that of "vinegar" is a still more curious instance. As the word "vinegar" is derived from *vin aigre*, which literally means "sour wine," it is a glaring tautology to speak of "white wine vinegar," since such a term can only mean "white wine, sour wine."

But we all know that vinegar is defined "by authority" to be "an acid liquid, prepared from a mixture of malted and unmalted grain by the acetous fermentation," though the sponsor for this description has since sought to extend the meaning of the term so as to include any liquid of which acetic acid is the most tangible constituent. This modified view of the nature of vinegar has not met with general acceptance, either by analysts or judicial functionaries, the definition meeting with the widest approval being that vinegar is an acid liquid produced by the alcoholic and acetous fermentations of a vegetable juice or infusion. This description includes vinegars prepared from malt, wine, raisins, cider, etc.; but excludes acetic acid produced by the distillation of wood. Where it is desired to define the nature and origin of the vinegar more clearly it is easy to describe it as "malt vinegar," "wine vinegar," "sugar vinegar," "cider vinegar," etc. The term "white wine vinegar" appears to me to be merely a more precise description of the nature of the vinegar, as it clearly points to its origin in the wine from white grapes.

To call dilute acetic acid "white wine vinegar" appears to me illogical, and the practice is one to be deprecated on the ground that, as far as possible, every article should be called by its right name. Of course I am well aware that dilute acetic acid has almost acquired a prescriptive right to be so misnamed, and the purchasers would probably be dissatisfied if they were supplied with the real article. Still, the ordinary practice has not the sanction of universal custom, since some of the leading dealers always supply real white wine vinegar when asked for it.

The following are analyses of two samples of the real article purchased retail in a town in the Midland counties:—

| Parts per 100 measures.            | A.    | B.    |
|------------------------------------|-------|-------|
| Acetic acid...                     | 6.37  | 6.49  |
| Extractive matters ...             | 1.42  | 1.55  |
| containing mineral matters...      | 0.28  | 0.30  |
| with alkali (K <sub>2</sub> O) ... | 0.046 | 0.046 |

Two other samples obtained direct from the im-

porters, and which I believe to be specimens of genuine white wine vinegar, showed on analysis:—

|                                   | C.     | D.     |
|-----------------------------------|--------|--------|
| Special Gravity ...               | 1.0197 | 1.0211 |
| Parts by weight per 100 measures. |        |        |
| Acetic Acid ...                   | 7.98   | 7.78   |
| Aluminous matters ...             | 0.10   | 0.19   |
| Carbohydrates, etc. ...           | 1.65   | 1.65   |
| Mineral matters ...               | 0.20   | 0.53   |
| containing phosphoric acid ...    | trace  | 0.065  |

Genuine wine vinegar always contains a notable quantity of acid potassium tartrate, which is not present in vinegar from other sources.

The following samples were procured by retail purchase from pharmacists in Midland towns, "half-a-pint of white wine vinegar" being asked for in each case. The results show that dilute acetic acid, sometimes coloured a pale yellow, was supplied in each case. The price paid varied from 1½d. to 4d. per half-pint.

| No.   | Label on Bottle.           | Acetic Acid Grammes per 100 C.c. | Colour.            |
|-------|----------------------------|----------------------------------|--------------------|
| 1...  | Pure white wine vinegar... | 6.45...                          | Water-white.       |
| 2...  | Vinegar                    | 4.41...                          | Pale straw.        |
| 3...  | White vinegar              | 5.01...                          | Nearly colourless. |
| 4...  | Acetic acid vinegar        | 3.15...                          | Water-white.       |
| 5...  | Vinegar                    | 4.80...                          | Water-white.       |
| 6...  | White wine vinegar         | 5.47...                          | Nearly colourless. |
| 7...  | Distilled malt vinegar     | 5.22...                          | Water-white.       |
| 8...  | White wine vinegar         | 5.10...                          | Water-white.       |
| 9...  | White wine vinegar         | 5.10...                          | Water-white.       |
| 10... | Distilled vinegar          | 5.91...                          | Water-white.       |
| 11... | White wine vinegar         | 4.23...                          | Pale straw.        |
| 12... | No label                   | 5.24...                          | Water-white.       |
| 13... | White wine vinegar         | 5.79...                          | Water-white.       |
| 14... | White wine vinegar         | 6.93...                          | Water-white.       |

White wine vinegar has a vinous aroma and peculiar flavour. However much it may be appreciated as a condiment by those who obtain the real article, it is clearly waste to employ it for pickling purposes, since its distinctive characters are thereby lost.

It seems highly improbable that wine vinegar will ever again come into general use in this country, and I would suggest that it would completely disappear if distilled acetic acid were not supplied in its place, or if the label described correctly the nature of the article sold.

### MR. JUSTICE WILLS ON ANALYSTS' DIFFERENCES.

LAST week Mr. Justice Wills tried at Birmingham an action *re* pollution of a pool. His lordship, in his judgment, said the case had been rendered difficult by the nature of the evidence. Until professional gentlemen came to the conclusion that it was better and more respectable for scientific witnesses not to make partisans of themselves, but to treat the matter fairly and without exaggeration, neither judge nor jury would be able to derive much assistance from them. He pointed out that the evidence of Dr. Hill and Mr. Jones was absolutely irreconcilable in regard to matters upon which one would have thought that educated gentlemen brought up in the profession of public analysts ought not to differ one from another. It was painful to see a case of that kind conducted on the part of a body of people elected by the ratepayers with so little regard for truth or propriety. He discarded the scientific evidence.

We could say something about judges' differences in general, and of Justice Wills in particular, but we have had one costly experience before his lordship for contempt, so we refrain because it cost us about one hundred pounds, and we don't think the contempt worth the money.



## MEAT-POWDER AND TUBERCULOSIS.

OWING to the perfection in manufacture and to the special care for the animals whose flesh is used, the meat-powder has been given a legal place in French therapeutics, and its applications become more and more numerous. The opinion that one of the surest and the most rapid means of curing tuberculosis is the over-alimentation with meat-powder has lately become current.

Dr. Lasniée (*De viande*, Paris, 1896), lets his patients take it in chocolate, whisky, with syrups, etc. Under its influence, anorexia disappears rapidly, nutrition is relieved, all the functions are improved. At the same time, as the appetite is improved, the perspiration stops, the sleep is better, plumpness takes the place of the emaciation, the moral state is favourably influenced, and the culture-ground of the tuberculous bacillus is modified.

## A WORTHY ENTERPRISE TO REFORM BILLINGSGATE.

A WEALTHY syndicate of Grimsby and North-east Coast fish merchants have before them a proposal to purchase a wharf on the Thames, with a view of establishing a rival Billingsgate. The syndicate has spent a quarter of a million sterling on a fleet of ships, and has at its head a member of the House of Commons, well-known in the trade. The belief of this gentleman is that the present market, which is under the direction of the City Corporation, is responsible not merely for high prices, but for great waste of fish. Should the new project be carried into effect it is intended to give to costermongers facilities that are at present denied them at Billingsgate. We wish the enterprise every success, for a more shameless gang of enemies to our fisheries and plunderers of the public than the Billingsgate Fish Ring cannot be found in these islands.

## A USEFUL SANITARY SUGGESTION.

DR. JAMES R. KAYE, Medical Officer of Health, Huddersfield, has always something not only interesting, but really useful to suggest in his annual reports, and his last one for 1895 contains a particularly valuable one.

"The Department," says Dr. Kaye, "would receive invaluable assistance if each house-owner were required to hang up in his house or houses a plan of the drainage, and if each householder insisted upon this before taking a house; indeed, I hold that the law should look upon a 'Drain Plan' as an essential part of the title deeds.

"The fact that smells are not complained of does not imply that no evil results will ensue. It must be remembered that there are sub-soil air currents, just as there are atmospheric currents, and acted upon much in the same way by variations of temperature, so that if the soil be impregnated with putrescible matter from leaky drains, or from cesspools, or privies, the polluted air in the soil is apt to be aspirated into the house by the up-currents produced by the rarefied air within the house.

"The idea of waiting until the malady occurs before the drains are taken account of is very bad policy, and it cannot be too widely recognised that all insanitary conditions influence disease, besides being responsible for many, so that attention to the drainage of a house should form a part of the spring cleaning, just as the cupboards and the walls, and, as in 'house-wives' work,' we should recollect there is no finality in sanitary work."

## WHAT SANITARY SCIENCE, AIDED BY GOVERNMENTAL AUTHORITY, HAS ACCOMPLISHED IN THE BRITISH EMPIRE.

AMONG the many addresses that were presented to the Queen in her Jubilee year, none appeared to me so

significant as that which was presented by the sanitary inspectors, summing up what had been done in England during the first fifty years of the reign. They observed that the general health of Her Majesty's subjects had advanced far beyond that of any great State of Europe or of the United States; that the mean duration of life of all the Queen's subjects had been augmented by three and a-half years; that in the last year's population of England and Wales there had been a saving of 84,000 cases of death, and of more than 1,700,000 cases of sickness, over the average rates of death and sickness at the beginning of the reign; that the death-rate of the home army had been reduced by more than half, and the death-rate of the Indian army by more than four-fifths.—W. E. H. LECKY, *Democracy and Liberty*, vol. i, p. 323.

## A USE FOR THE HOLLOWAY'S, SEIGEL'S, ST. JACOB'S OIL, WILLIAMS' PINK PILLS, BEECHAM'S PILLS, AND HOOD'S SARSAPARILLA LITERATURE.

IT is a favourite axiom of the optimists that everything has its uses. But it has remained for the New Mexico Territorial Board of Health to find a use for the patent medicine almanac. In a recently-issued circular on the prevention of consumption, among other things it is advised that "every person so affected should spit into some receptacle and should see that the sputum is soon destroyed by fire. About the house there is no better way than to spit between the leaves of patent medicine almanacs—to be had freely at all drug stores—and after half a dozen or more spittings, burn the book."

## COPPERED PEAS: THE GLASGOW CHAMBER OF COMMERCE SNUBS THE LONDON CHAMBER.

At the monthly meeting of the Glasgow Chamber on August 10, the Chairman read a letter from the London Chamber of Commerce, which contained a copy of a circular addressed to various places in France and Italy in regard to prosecutions that had taken place in this country for the sale of green peas and other vegetables treated with sulphate of copper to preserve their freshness. A very large trade had been done in them. The prosecutions had taken place at the instance of the local authorities, their contention being that the peas were injurious to health. The result was that dealers were giving up the trade rather than risk prosecutions. The circular contended that the cases tried before the Courts failed to show that the articles were injurious to health, and called upon the members of the Glasgow Chamber to protect the trade, by supporting a proposal to bring pressure to bear on the Government with the view of removing the hardship from which retailers suffered under the present law, until such times as the proper quantity of sulphate of copper injurious to health was definitely known.

Mr. Galloway suspected that the application of the sulphate of copper was left to irresponsible persons, and they could not guarantee that the quantity applied was the correct quantity. He did not know how they were to protect the people unless by totally preventing the peas from being imported.

The Chairman said if this course were adopted they would kill a very big trade.

Mr. Galloway said he did not want all green vegetables kept out of the country. He referred to those that were adulterated with sulphate of copper.

Mr. Hedderwick said that it seemed to him they wanted to encourage the manufacture of tinned stuffs containing, more or less, injurious substances. It appeared to him a most preposterous thing. One statement in the circular showed that the question was bringing about its own cure, and that was that the trade was being largely given up by the traders. He thought the best way should be to prosecute the importing houses as well as the retailers.

The Chairman thought if it could be proved that the sulphate of copper in the peas was injurious to health, their importation should be stopped.

Mr. Nathaniel Dunlop suggested that they deprecate the encouragement of the importation of vegetables treated with sulphate of copper, which were not similarly permitted to be treated at home.

This was agreed to.



## MEAT.

At Clerkenwell Police-court, on August 5, James Rennie, 31, butcher, of Long-acre, Aberdeen, was charged on a warrant for unlawfully depositing at the shop, 91, Cow Cross-street, Holborn, two sides of beef, intended for the food of man, which were unsound and diseased.—Evidence was given that the defendant consigned the meat from Aberdeen to Mr. Link, 91, Cow Cross-street. The meat was examined by Sanitary Inspector Billing, and found to be tuberculous, and totally unfit for human consumption.—Mr. Hales, solicitor, who prosecuted, said defendant had been four times convicted of similar offences in Scotland.—Mr. Horace Smith said it was quite clear that Rennie was a person who would not take any warning, and would have to be given a sharp lesson. He would have to go to prison for three months, with hard labour.

## BEER AS IT IS.

At Lambeth, on August 10th, Albert Chittick was summoned by the Excise for diluting beer. Mr. Hawkins, from the Solicitors' Department, Somerset House, appeared in support of the summons. Two Excise officers visited the defendant's premises, the Camden Arms, Camden-street, Peckham, and took some samples from the cellar. The samples were submitted to analysis at Somerset House, with the result that the fined sample was found to be diluted, the dilution being equal to the addition of four gallons of water to the barrel. The defendant, in answer to the summons, said he had been ill for some weeks and trusted to other people. Mr. Hopkins remarked that it was as bad a case as could be, and ordered the defendant to pay a penalty of £30.

## SPIRITS.

At Long Eaton Petty Sessions, on August 4, Mrs. Turton, Royal Hotel, Long Eaton, was fined 10s. and costs for selling rum 40 degrees under proof, on July 7. Captain Sandys prosecuted.—Mr. Turton explained that the rum was mixed by mistake.—Captain Sandys said a sample of gin was all right.

At Reading, on Aug. 7, Daniel Sears, of the Swan, St. Mary's Butts, was summoned for selling a quantity of adulterated whisky on July 16th.—Mr. Robert Simmons appeared on behalf of the defendant, and pleaded guilty to the offence. Mr. Millington, the deputy Town Clerk, prosecuted on behalf of the Corporation.—The Inspector of Nuisances stated that on July 16 he went to the defendant's premises and purchased half a pint of whisky. He told defendant he was going to have it analysed.—Dr. Ashby's report showed that the sample of whisky was 37 degrees under proof, 12 degrees below the lowest limit named in the Act.—The Chairman reminded the defendant that he was liable to a penalty of £20, but as this was his first offence he would be fined £2 and costs, and his license would not be endorsed.

At Dartford, on August 8th, Abraham William Harris, of High-street, Dartford, was summoned for selling P. C. Couch, on the 14th July, half a pint of whisky which was not of the nature, substance and quality demanded. The analyst's certificate stated that the sample he had received was 30.80 under proof, which was 5.80 below legal limit. Mr. Chancellor, for the defence, contended that it was not the duty of the analyst to say what was the legal limit, but for the Justices to do so; the analyst should only have mentioned how much water and how much spirit there was in the sample. The Bench being against Mr. Chancellor on this point, he urged in mitigation of penalty that defendant had been in bad health and his wife "broke down" a jar of spirits which had probably been tampered with by some other person. Defendant was fined £2 and costs.

At Belper Petty Sessions, Ellen Walker, licensed victualler, was charged with selling adulterated rum on the 14th July. Captain Sandys, the inspector under the Food and Drugs Act, prosecuted, and called evidence to show that the rum was bought at the house. The analyst's certificate showed 10 per cent of added water, and was 7 degrees below the required standard. The defendant did not appear. She had been in the house 40 years, and this was the first charge. A fine of £1 and costs was imposed.

## MORE TINNED MEAT CASES.

Four children living at Ettingshall suffered last week from the effects, it is believed, of partaking of unsound tinned beef. The father of the children is William Jones, of 95, John-street, Ettingshall, and on Tuesday Mrs. Jones

purchased a tin of meat from the shop of Mr. J. E. Durant, grocer, John-street, Ettingshall. Shortly after their meal the children, who range in age from two up to twelve years, complained of pains in the stomach and vomited, and Dr. Bulger was sent for, who prescribed an emetic, which had a beneficial effect. Mrs. Durant, the wife of the grocer who sold the meat, had some out of the same tin, and she was also taken ill, the doctor certifying that she was also suffering from the effects of poison. The unconsumed portion of the meat has been handed to Police-constable Head, who has communicated with the authorities with a view to its being analysed.

## REVELATIONS OF THE SAUSAGE TRADE.

At the Worship-street Police-court, on August 11, Frederick John Robinson, wholesale maker of sausages and brawn, of 136, St. Stephen's-road, Bow, was summoned before Mr. Haden Corser by the sanitary authority of the Poplar District Board of Works for having deposited on his premises, for the purpose of preparation for human food, certain veal, pork, and bullocks' heads, the same being unsound and unfit for human food.

Mr. Muir, barrister, prosecuted, and Mr. W. T. Ricketts, solicitor, defended.

The prosecution was laid under the 47th section of the Public Health Act, and the facts having been detailed as an opening of the case,

Dr. Russel Mayne Talbot, one of the medical officers of health of the parish, said that with the sanitary officer he went to the premises of the defendant on June 17. They comprised three large rooms—a cutting-room, a stock-room, and a boiling-room. On entering the first room they saw seven heads of bullocks hanging up, and witness noticed that the muzzles of the same were green. Passing into the stock-room, witness examined some hind-quarters of pork and quarters of veal hanging up. He directed the seizure of three hind quarters of pork, and one fore-quarter of veal. They were soft, sour, and had the smell of decomposing meat. On returning to examine the bullock's heads he found that three of them had been removed, the flesh had been cut from the cheeks of two others, and the remaining two, intact, he found to be stinking, utterly unfit for food. The defendant had entered the rooms whilst witness and the officers were engaged, and became very abusive and obstructive. He said that all the meat was good, and had come from the market that morning. Witness pointed out the condition of the meat to the defendant, and told him that if he allowed matters to proceed quietly he might hear no more of the matter.

Cross-examined by Mr. Ricketts, he said that if the defendant had allowed the seizure to proceed and the meat to be removed quietly he might not have been summoned—that was the meaning of what he told the defendant. Witness in saying that referred to the veal and pork, as he had not examined the heads at that time. The Sanitary Inspector discovered maggots, and called witness's attention to them. The three that had been removed were all green at the muzzles, and there was no doubt the three men at work had cut them up whilst witness was engaged in the stock-room.

Corroborative evidence as to the state of the meat was given by the sanitary inspector, Mr. Raymond, and Wm. Boyce, assistant inspector. The meat was condemned at this Court by Mr. Dickinson, sitting magistrate, but it was said to have "stunk the yard out and made the gaoler retch."

For the defence, Mr. Ricketts pointed out that of 11 quarters of veal on the defendant's premises, only one was seized, and he said that all was killed at the same time. The same applied to the pork—12 quarters, three seized, and all from pigs killed at the same time. Mr. Ricketts laid stress on the fact, as admitted by the inspectors, that they had not used a skewer or other probe to test the goodness of the meat at the bone, and said he would call an inspector who had passed the veal and pork that morning.

The defendant himself was the first witness called for the defence, and deposed to the purchase of the meat at shops "near the central markets," the veal from a Mr. Roberts, of Charterhouse-street, and the pork and heads from a dealer named Corn, of Cow-cross.

The witness admitted in cross-examination that he was convicted at this court in December last and fined £50 for a similar offence—having bad meat on his premises in preparation for food.

Roberts and Corn gave evidence that the meat they sold to Robinson was good, but the veal having been sent from



Rotterdam had been in a refrigerator, and on exposure would be damp from thawing.

George Timothy Billing, sanitary inspector of the Holborn district, deposed to examining the pork at Mr. Corn's, which, after the examination on the morning of the 17th, he passed as good.

Cross-examined, he admitted that, the weather being close and muggy, the meat might, owing to want of care, have turned before three o'clock in the afternoon.

In giving judgment, Mr. Corser thought there was not the slightest doubt that the meat seized was unfit for food; and also that, but for the visit of the officers the public would have consumed a large portion of that meat in the form of sausages. He imposed a fine of £50 for each of the three parcels of meat—pork, veal, and bullocks' heads—£150 in all, or three months' hard labour. The penalty being recoverable by distraint, the defendant was given a week in which to pay.

Application was made by the prosecution for costs, but Mr. Corser pointed out that under the Act the parish was entitled to the penalty. That, to his mind, was a highly objectionable provision, as he considered that no public body should have an interest in any penalty resulting from their prosecution. He refused costs.

### PRESENTATION TO A GLASGOW SANITARY INSPECTOR.

THE Glasgow Sanitary staff, on August 6, presented Mr. Thomas Baird Stewart, inspector of the northern district, with a handsome onyx clock, suitable ornaments, and a Malacca cane, on the occasion of his retirement after 26 years' service. Dr. Russell, medical officer, presided, and in his introductory remarks said that Mr. Stewart represented an order which was passing away. He was appointed at a time when the staff was selected from men who had attained positions in some calling allied to the business of the Sanitary Department, and before the days of diplomatic parchment. (Applause.) Mr. Peter Fyfe, chief sanitary inspector, then made the presentation, and in doing so gave a brief *résumé* of Mr. Stewart's career, and passed high encomiums on him for his valuable services to the Sanitary Department. Mr. Stewart accepted the gifts in a few very appropriate words. The little ceremony, attended by nearly all the sanitary officials, was a very interesting one.

### THE SANITARY INSTITUTE CONGRESS AT NEWCASTLE.

IN connection with the forthcoming Congress of the Sanitary Institute, it has been arranged that a Conference of Sanitary Inspectors shall be held on Thursday, September 3. The following papers are to be read:—"Sanitary Work in Rural Districts," by Mr. William Bland, Urmston; "The Spread of Scarlet Fever," by Mr. Tom Stake, Manchester; "The Duties of Sanitary Authorities in relation to Factories, Workshops, and Shops," by Mr. Thomas F. Cass, Hull; "Our Meat and Milk Supply, and the law relating thereto," by Mr. George T. Billing, Holborn, London.

### CORNWALL COUNTY COUNCIL AND THE PUBLIC ANALYST'S REPORT.

THE public analyst's report for the quarter ended June 24, was as follows:—

In the quarter ending the 24th June your inspectors have sent me 50 samples for analysis under the Sale of Food and Drugs Act. They consisted of—15 milks, 3 teas, 5 breads, 3 cheeses, 3 butters, 2 sugars, 1 sweets, 1 lard, 2 saffrons, 1 ground ginger, 1 pickles, 1 vinegar, 1 lozenges, 4 brandies, 3 whiskies, 2 gins, 1 rum. These articles have been generally of good quality. The milk supplies, however, should, in some cases, be improved. Of the 15 samples examined, two were found to have been somewhat diluted with water; two others were of poor quality, barely coming up to my low standard. Most of the others were of excellent quality.

One sample of "fresh butter," although genuine butter, was very badly made; it had a streaky appearance, and retained a high percentage of water.

No prosecutions under the Food and Drugs Act have taken place during the quarter.

Mr. Grylls said he thought the names of those from whom the samples were obtained should be published.

Mr. Digby Collins called attention to the report of the Select Committee on Adulteration. The committee, he

said, unhesitatingly recommended that the officials at Somerset House should, in future, conduct their analyses under the regulations of a committee composed of the best scientists of the kingdom, who would prescribe the standard of purity. They also proposed that all products used in the manufacture of food should be brought within the Act.

Mr. Trevel suggested that the committee should have an early meeting, so that they might take steps to strengthen the hands of Parliament in carrying the recommendations of the Select Committee into law.

### THE WEIGHTS AND MEASURES (METRIC SYSTEM) BILL.

THE Government Bill to legalise the use of weights and measures of the metric system is a very short one. The clauses are as under:—

1. (1) Notwithstanding anything in the Weights and Measures Act, 1878, the use of a weight or measure of the metric system in trade shall be lawful, and nothing in section 19 of that Act shall make void any contract, bargain, sale, or dealing by reason only of its being made or had according to weights or measures of the metric system. (2) A person using, or having in his possession, a weight or measure of the metric system, shall not by reason thereof be liable to any fine. (3) For the third schedule to the Weights and Measures Act, 1878, shall be substituted the schedule to this Act.

2. Section 38 of the Weights and Measures Act, 1878, is hereby repealed, and the Board of Trade shall verify copies of metric standards in the same manner as if they were copies of Board of Trade standards, and the provisions of that Act relating to the verification of local standards shall apply accordingly.

3. In section 40 of the Weights and Measures Act, 1878, the expression "local standards of weights and measures" shall include local metric standards, and the provisions of that Act relating to local standards shall apply accordingly.

4. This Act may be cited as the Weights and Measures (Metric System) Act, 1896, and may be cited with the Weights and Measures Acts, 1878 to 1893.

### COMPLETION OF THE CAVERSHAM DRAINAGE SCHEME.

ON Wednesday last, at Caversham, Oxfordshire, the Member for the South Oxfordshire Division of the county, Mr. R. T. Herman Hodge, M.P., formally opened the Caversham Drainage and Outfall Works, in the presence of the Mayor of Reading and a large number of visitors.

The length of sewers is about 11½ miles.

The Chairman of the Council stated that he believed they had the most perfect system of drainage ever put down, the greatest credit being due to their engineer, Mr. C. Nicholson Lailey, C.E., of Westminster, for although they had four miles of sewage under water, with a pressure of about 5ft. of water, the leakage was not enough to see which way a straw would blow.

The sewage on reaching the Outfall Works is dealt with on the International system, the sewage after precipitation passing on to Polarite filters. Sludge-pressing machinery of the most recent design is provided. The tanks and filters are built on arches considerably above the ground in order to be above flood level.

Great satisfaction was expressed with the scheme, which has been carried out with far more expedition than was at first anticipated, and for a sum well within the amount of the loan sanctioned by the Local Government Board.

### UPPERMILL SEWAGE PURIFICATION WORKS (W. R., YORKS.).

THE Chairman of the Uppermill Urban District Council, T. J. Wild, Esq., J.P., was, on Wednesday, July 29, called upon to perform the interesting function of opening the Sewage Purification Works, recently completed after the design and under the direction of Mr. T. S. McCallum, A.M.Inst., C.E., of Manchester.

In the course of the proceedings Mr. McCallum explained to the numerous visitors that the sewage on entering the works passes through a detritus and screening chamber, in which are arrested any floating matters of large size, the road and other detritus. Having passed through this chamber the sewage receives an adjusted amount of Ferozone, the precipitant in use, then in its further course



along the mixing channels the action of the Ferozone occurs, and on reaching the tanks the sewage is fairly coagulated. The two precipitation tanks are circular ones, with flat bottoms, and are fitted with the Candy patent automatic sludge removing apparatus. The Ferozoned sewage enters these tanks at the bottom by means of a number of down pipes, built in the walls of the tanks. The coagulum formed by the action of the Ferozone is by this means of entry deposited directly in the area below the entrance pipes in the form of sludge, and the clarified water works gradually upwards, and is finally collected at the top of the tank by a number of shallow channels. By distributing the discharge from the tanks over a comparatively large area, the effluent is withdrawn without setting up currents in the tanks, the aim of the engineer being to have a continuous flow through the tanks upwards, so as to economise space and labour, for whenever the deposited sludge requires to be removed, once or twice a day, as the case may be, its removal is effected simply by the operator opening a valve and turning a handle for about ten minutes, during which time the floor and sides of the tank have been cleansed by the Candy apparatus and the sludge discharged at about 18 inches below the water level. In addition to the advantage of this form of tank as regards efficiency and continuance of work (the tanks are never emptied), and the ease with which they are cleansed, is the important one of levels, for, as will be seen, the difference between the invert of the sewer and the delivery of the effluent and even sludge from the tank is very little. This advantage is so great that, in some cases, instead of requiring a pumping scheme, on account of want of fall, a gravitation scheme will suffice, and so save the cost of installation and maintenance of pumps. In fact, the Upper mill scheme must have included pumping, but for the above arrangement, or, if not, it would have meant a scheme costing three or four times the present one.

The sludge discharged from the tanks gravitates to the sludge lagoons to dry, and become valuable manure. The tank effluent passes direct to the Polarite filters. Comparing the incoming sewage with the tank effluent, it is seen that the bulk of the "suspended" polluting matter has been arrested in the tanks, but however bright this tank effluent is, it still contains organic matter in solution of a highly polluting nature. This noxious matter in its passage through the Polarite filters is brought in contact with the occluded oxygen in the pores of the Polarite, combination takes place, with the result that the Polarite effluent passes away a clear, bright stream, free from all danger of secondary decomposition, and fit to enter any river or watercourse. The process adopted by Mr. McCallum is one so well-known, viz, the "International Process"—precipitation by Ferozone and filtration through Polarite. The efficiency of this process has been fully demonstrated, and Mr. McCallum has carried out several important works on this same process, notably Royton, Swinton, Pendlebury, etc., and is now engaged completing works in the adjoining districts of Mossley and Saddleworth.

After listening to Mr. McCullum's description, the Chairman concluded the function by expressing the satisfaction of his Council with the arrangements of the works and the excellent results already obtained.

Messrs. Fotherby and Son, Burnley, have been contractors for the works.

#### NEW BOOKS.

##### "PROFESSOR CORFIELD ON DISEASE AND DEFECTIVE HOUSE SANITATION."

(H. K. Lewis, Publisher, 136, Gower-street, London, W.C.  
Price 2s.)

This book contains the substance of two lectures delivered by Professor Corfield to the Harveian Society, for which purpose the well-known Medical Officer of Health for St. George's, Hanover-square, went through the records of more than a thousand cases occurring in his private practice, in which he found sore throats, diphtheria, scarlet fever, blood poisoning, puerperal fever, pneumonia, diarrhoea, and enteric fever, traceable to defective sanitary arrangements in houses. Some of the most notable of these personal experiences are given in the book, with illustrations explanatory of the defects found in the sanitary appliances, workmanship, and fixings. As the book is a practical one by a recognised authority on sanitary work, no one engaged in public health work can fail to be both interested and instructed by it, and it well deserves a large sale.

#### THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.  
*Chemist to the Dutch Admiralty.*

(Continued from page 395.)

OF twelve explosions which happened in Berlin and were closely examined, nine were caused through oil under  $69.8^{\circ}$  F. and two to oil over  $69.8^{\circ}$  F. test (Appendix, page 26). Therefore the introduction of the Standard Flash Point of  $69.8^{\circ}$  F. will surely be suitable to prevent the greatest part of the accidents which have been possible with petroleum lamps." It has already been pointed out several times that the Royal Standards Commission now gives up the standpoint, and ascribes at most 1 per cent. of the accidents to explosions.

The objections which have been heard against the fact that Germany has fixed a flash point about  $3.6^{\circ}$  F. lower than England, are tried to be opposed by the known, already discussed, argument. A complete analysis of the Standard Oil has not yet been made, because a measure whereby only oil of a flash point "far above  $86.0^{\circ}$  F." would be admitted would be followed by "a considerable raising of the price of petroleum." Also the statement by Schütte, which, as we know, is completely false in its generality, or, more correctly, that of his "American friends," that a raising of  $3.6^{\circ}$  F. would cause a perceptible rise of the price of petroleum, is repeated. The remark is correctly made that oil  $73.4^{\circ}$  F. is in reality just as dangerous as oil of  $69.8^{\circ}$  F. test. It concludes with a sentence which, against any further possible remarks, means an appeal to the future—"After all, the judiciousness of fixing the standard of flash point at  $69.8^{\circ}$  F. depends upon circumstances; and no data have till now been forthcoming in regard to the influence of the quality of the petroleum on the one side and the lamp construction as well as the room temperature on the other side, on the cause of the explosions which have really occurred, of a sufficiently assured general validity; and these are only to be obtained by the general introduction of the petroleum tester."

The treatment of the history of the legal flash point of  $69.8^{\circ}$  F. (Abel) in Germany, and the remarks to which it gave rise, is herewith finished. That this flash point is far too low, and therefore its introduction according to the present ideas was a mistake, I have tried to prove by pretty detailed criticism.

I have already pointed out several times that the standpoint of the Board of Health fifteen years ago can be understood, and, it need not be specially remarked, was a rational one considering the condition of our knowledge of most points at that time. An excellent work starts with the different apparatus (see "Materials"). It was fair to ascribe the known accidents almost exclusively to the petroleum of a test under  $70^{\circ}$  F. (Abel) occurring then; the one-sided standpoint, to consider exclusively the danger of explosion of the oil in the lamps, was fair; there was no cause to distrust the statements made through the mouth of Schütte, and others of the American petroleum manufacturers taking part in the debate. The Standard Oil Trust, instituted in 1882, was as the Standard Oil Company not as powerful a company as now.

There was still a considerable competition besides that from Baku, and the petroleum importers were therefore much more independent than now, when the majority are simply agents of the Standard Oil Trust. Yet the gentlemen entrusted with the refining of petroleum will repeatedly have thought over some remarks of Schütte; for instance, over the assertion (page 10) that the American refiners must have to make a great many expensive arrangements in order to prepare themselves for the test of  $120^{\circ}$  F. (America) ( $= 73$  degrees F., Abel test), therefore for the test already valid in England.

Now, one cannot suppress astonishment that a complete analysis by fractional distillation of the Standard



Oil, No. 1, by means of a good Column apparatus by the chemist of the Board of Health, had not been executed. It would have, as already remarked, sufficed to lead back upon the right measure the assertion of the American refiners, explained by Schütte at the beginning of the debate that oil of about 73° F. (Abel) (120° F., American) was about 6 per cent. dearer than oil of about 68° F. (Abel) (110° F., American), and the asserted yearly additional expenditure of 4,000,000 m.; that is to say, at most, 1 per cent. Already the experiments of the Board of Health with Bernstein's apparatus ("Materials," page 69) give an idea in this direction, although this apparatus cannot be compared off-hand with Abel's. An addition of  $\frac{1}{2}$  per cent. naphtha (its initial boiling point is not given) was sufficient to lower the flash point by 5° or 6° F. That is, therefore, about the amount which is to be discussed. The defence of the logical conclusion of the Board of Health ("Materials," page 74), "in no case must the flash point in Germany be demanded lower than in England, so that the goods found unreliable in England will not be brought upon the German market," attacked so frequently by the representatives of the trade, would have been an easy matter.

Also Professor Engler, who has taken part in the discussion about the connection of flash point and price, between Assessor Hoffmann on one side, and Schütte and Friesland on the other, with the remark only that the Astral oil contains 96 per cent. of the heavier and better of the burning oil parts of petroleum (which must, as pretended, explain its high price), had evidently not executed at that time a good fractionation of the standard oil, otherwise he would have, of course, joined in the debate with the weight of his authority.

#### ILLUMINATING POWER, PRICE, Etc.

A few more points which cannot be left untouched in the question of raising the flash point must be discussed a little more closely than has already been done, for the purpose of giving expression of opinion and the publication of the experiences of others in regard to it. Firstly, it concerns the illuminating power and the capillarity of the oil obtained by depriving the petroleum of 68° F. to 75° F. in use now (in order to take an unfavourable example, the Standard Oil, No. 1) of its volatile parts by good fractionation (therefore not by an Engler's apparatus), until there remains an oil of about 104° F. (Abel test); secondly, the price of an oil with a test of 104° F. or a little higher; thirdly, the question whether the quantity of crude petroleum can bear the working with higher tests; in other words, whether possibly the reduction of the crude petroleum existing specially in North America does not make the use of the more volatile parts as burning oil necessary, as it is asserted.

As regards the first question, I beg to communicate a few trials with lamps which I have made with the petroleum manufactured by fractionating from Standard Oil, No. 1, which I have already discussed. The oil had an Abel test of 104° F., and a specific gravity of 0.803, and had therefore come only a trifle more heavy. It had been coloured yellow-brown: a filtering, after warming, with bone-black discolours the oil.

I also made experiments with the oil, still coloured yellow-brown, in lamps of different construction, that is to say, also to the primitive lamps such as the working class uses. A difference from the ordinary oil of 71.6° F. to 75.2° (Abel test, 0.793 specific gravity) has in no way been able to be observed. This oil burns just as well, and no formation of crust is noticed. Besides, I expected this result, because experiments made before with heavy material lamp oil (so-called mineral colza oil) of a specific weight of about 0.825, and a flash point of about 257° F., open test (Abel test = 230° F., or 300° F., fire test American) had proved to me that this oil burns almost equally well with ordinary petroleum. Fractionated in

Engler's flask it began to boil at about 250° C. The following result was obtained from 100 ccm. :—

|                   |        |                 |           |
|-------------------|--------|-----------------|-----------|
| Up to 280 deg. C. | 4 ccm. | 300-320 deg. C. | 25.5 ccm. |
| 280-290 "         | 12 "   | 320-360 "       | 28 "      |
| 290-300 "         | 19 "   | Over 360 "      | 19 "      |

This oil contains, therefore, about 12 per cent. parts boiling over 360°, the Standard Oil, No. 1, about 22 per cent. Now, this oil is burnt on the warships of the Dutch Navy, and on the lightships of the coast; it is, so to speak, without danger. One can let the oil run out along the flame of a partly-tilted lamp without it being ignited. It is burned on the ships in ordinary metal "Lamps belges," and also in small metal kitchen lamps with quite ordinary burners. (The distance the oil has to raise with these little lamps quite filled is 9 ccm., and with almost empty lamps 14 ccm.) Only attention must be paid with the use of this heavy oil that at the beginning its temperature and that of the lamp are not too low, for instance, 59° F. to 68° F., otherwise the oil, being somewhat viscous, rises slowly to the wick and burns with a small flame and formation of crust. Once well lit, a "Lampe belge" burns for fifteen hours with almost constant brilliancy. As the lamp is made of metal, the temperature of the oil rises to 86° F. or 95° F., in a closed lantern even to 104° F. to 113° F., so that the oil remains sufficiently thin. Also in cold weather, provided that the wick tube has become sufficiently warm, the oil burns excellently. I have, for instance, emptied the receptacle of a well burning lamp quickly and immediately filled it with the same oil cooled down to 0° C., and partly crystallised, without a perceptible diminution occurring. If now an oil of such high flash point burns very well in many of the daily-used lamps, providing only that the rising height is not too great and the temperature not too low, I was pretty sure that the self-prepared oil of 0.803 specific weight and 104° F. (Abel test) would do also very well although it may contain much heavier oil. It is true that after some hours the illuminating power diminished; but that is also the case with ordinary oil of 71.6° F. to 75.2° F. test, and, according to my observations, there was, with daily use, no difference noticeable. Also Thörner, and Engler, and Levi have noticed that with ordinary oil the illuminating power may gradually sink. Nevertheless, it is possible that there are some primitive lamp constructions in which only petroleum of 71.6° F. to 75.2° F. burns well, and not that of 104° F. prepared by me; however, I do not consider it probable.

As regards the often touched second question, the price of the oil with higher test, I beg to draw attention to the following list, which refers to the prices of September this year :—

|                                         | Flash Point<br>(Abel). | Boiling Point.<br>To about | Price per Litre.  |                    |
|-----------------------------------------|------------------------|----------------------------|-------------------|--------------------|
|                                         |                        |                            | To                |                    |
| Ordinary Petroleum                      | 71.6° F.               | 203° F.                    | 1.2d              | (retail price).    |
|                                         | 75.2° F.               | 239° F.                    | 1.44d             | "                  |
| Ordinary Petroleum<br>of Poth, Mannheim | 80° F.                 |                            | 1.2d              | "                  |
|                                         | 82.4° F.               |                            | 1.44d             | "                  |
| Mineral Sperm Oil                       | 100.4° F.              | 275° F.                    | 1.44d             | "                  |
|                                         |                        |                            | 1.68d             | "                  |
| Luxury Oils                             | 104° F.                | 284° F.                    | 2.4               | "                  |
|                                         | 122° F.                | 320° F.                    | 2.6               | "                  |
| Electric                                | about 104° F.          | 320° F.                    | 1.48d             | (wholesale price). |
|                                         |                        |                            | 1.8d              | "                  |
| Mineral Colza Oil                       | 230° F.                |                            |                   |                    |
|                                         | 239° F.                | 482° F.                    | about 1.4 to 1.5d | "                  |
|                                         | 257° F.                | to 266° F.                 | open.             |                    |

This composition shows, firstly, that, at all events, for many of the so-called luxury oils also real luxury prices are paid. The well-to-do classes willingly pay 100 M. per annum too much for safer oil, and these prices must not be taken into comparison. That these prices are far too high, the following corroborates :—(1.) The fact that one needs only to distil 6 to 8 per cent. of the more dangerous oils out of an oil of 71.6° F. to 75.2° F. test in order to receive a safe oil of 104° F. (2.)

(To be continued.)



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# Food and Sanitation.

SATURDAY, AUGUST 29TH, 1896.

## ON THE ORIGIN OF THINGS: SOME FACTS AND A MORAL.

THE bully is at any time a sickening creature, but he merely proves the old saw that "where the dirt is it must come out," and he is to be found in full bloom in the higher branches of the law, where he can have his own sweet or bitter will. It speaks little for the wisdom of our ancestors that they permitted themselves to be insulted, plundered and harassed by the most contemptible class of the community without making any real protest, but it is the truth. The cads, thieves, and promoted ex-thieves who call themselves the higher branch of the law, browbeat, slander, rob and insult

just as the whim seizes them, and no one thinks of questioning their right to take such liberties; no one compels them to disgorge the money obtained by false pretences, or chastises their vulgarity and insults by a hearty application of a vigorous foot to the rears of the pests. To the sociologist the study of public pests, as evidenced in the present position of the Bar and the Bench, is full of interest. He sees, for example, blatant hirelings holding forth against some poor wretches at this assize or the other for misappropriating monies. Stripping the advocate of his bunkum he finds on analysis that the denouncer of theft is himself the most impudent of thieves, for the barrister can take a fee to plead for you, and can go and plead for some one else or not trouble to plead at all, and you have no remedy against him. He can, and does, obtain money regularly by false pretences, and the law protects him in his thieving. It is only a few months since an ex-Solicitor-General obtained from one litigant we know an *extra* one hundred guineas, as a "special attention fee," over and above the one hundred paid him as a retainer. He gave no special attention—in fact he took no trouble in the case—but spent his time in another Court in a *cause célèbre*, leaving all, save the opening, which was a few minutes of generalities, to his junior, and hurried away to snatch another set of fees in a cause where he would get plenty of press reports. The result was, the case of the litigant we know ended in a *fiasco*; he obtained a verdict for a few pounds, which meant he lost, in addition to his two hundred guineas, a large sum of money, instead of gaining what he was justly entitled to—some ten thousand pounds damages. The ex-Solicitor-General, however, kept the retaining fee and the special attention one, and when he becomes a judge (as he no doubt will) he is sure, like many others who have taken fees in a similar manner, to have the hypocrisy to preach homilies about the vice of dishonesty.

To take another object lesson, wherein we were the victims ourselves. We had written respecting the decision of a judge who held that baking powder was not an article of food, pointing out the stupidity of that judgment. Shortly afterwards an application was made to commit us for contempt of court upon an entirely different article. A couple of judges treated the application as ridiculous until the counsel appearing against us very astutely handed up a marked copy of our views upon the baking powder case to their lordships. That settled us, for they immediately did everything asked of them, and would have rejoiced had they been asked to dungeon us for the rest of our existence. Their honour and justice was so elastic that they punished us for that *which was not before the Court, and in sheer vindictiveness* one moment they were treating the application with contempt, as frivolous and vexatious, the next they raved for our blood, and had it to the tune of about one hundred pounds. Only a few days ago a judge delivered a homily about analysts, saying "it was painful to see a case conducted with so little regard for truth or propriety."

We don't like to see "expert evidence" of a shameless, untruthful, improper, or partisan kind, and no paper in England has exposed that class of evidence more strenuously than we have done, but in the case in question the judge was either incapable of understanding the facts or did not take the trouble to understand them, with the result that two gentlemen were attacked in a manner offensive and unjust, which, did not those acquainted with them know that they are not the sort of "experts" to distort truth for partisan purposes, might do them much harm. We are, of course, perfectly certain that no barrister or judge ever "conducted or decided a case with little regard for truth or propriety," and yet we seem to have a recollection of the most eminent legal luminary in England only a few years ago panegyrising a mean cad who had seduced a widow, possessed himself of her property, and levanted, leaving the child of the inter-



course and his victim to destitution—as “a brave British youth who sought fame and fortune in a foreign land.” If this be not enough of an object lesson in propriety we have plenty more at hand, but we content ourselves with just one example of judicial propriety which speaks volumes. The late Lord Chief Justice and another very eminent judge were trying an action affecting some London property. They differed about the judgment, and the Lord Chief Justice, who happened on that trial to have been awake most of the time, was obstinate in his views. “All right,” said his brother judge, after a time, “give the judgment as you like; I don’t care a hang. I’ve got no London property!”

There are many living who heard and saw this performance of judicial propriety. There is a moral to this, and it is that judges are, after all, only human like other men. It is not meet and just that they should be promoted party hacks, as many on the Bench now are, nor is it consistent with the dignity of the office that some of them should be of such inferior mental capacity as to evoke the contempt of judges possessing real qualities for the office. It is absurd that those having to go to law should be compelled to employ first a solicitor who knows every point in the case, and that the solicitor should not be allowed to plead in the High Courts, but should be compelled to draw up briefs and entrust pleadings to a person who can pocket the money and bilk the litigant. It is a hardship and a scandal that those going to law should be fleeced to pay for that useless excrescence on justice—the barrister—who is the finished product of centuries of brazen effrontery, for there is no law legalising his intrusion into the law, or justifying his taking a fee. He therefore takes care to grab it beforehand, because he well knows there is no law entitling him to recover, as there is none to punish him for obtaining money by false pretences should he bilk the person hiring him. It is a curious social study, this of the needy clerk of centuries ago, with ink-horn and ragged gown, having a cape at back in which whoever he could prevail upon to give him an odd job in writing or lying was expected in charity to drop whatever dole he felt the writing or lying deserved. Whenever we see one of the pests we are reminded of the observations of Jimmy Hirst, the quaint Yorkshireman, who visited the law courts, and, seeing a barrister, ejaculated to Lord Beaumont: “Sitha! Yonder’s an old woman i’ her nightdress that’s tumbled out of bed into an ink pot, and is crawling about. Let’s get a mop and clean her.” Jimmy Hirst could train a bullock to hunt and jump fences, and he could ride the animal, but we doubt if, even with the aid of Brookes’ Soap and Vinolia Soap, he could cleanse and deodorise the law as it now is, for it is more chance and chicanery than justice. Demos in years to come may vomit forth an English Napoleon to bathe in blood and spread war, famine, and pestilence far and wide. Such an one, unscrupulous as the law itself, may enter the temple of the law, cast out those who now make equity impossible, and codify England’s thieves’ maze. To the credit of the Bench it must, in justice, be allowed that there are judges able, learned and conscientious, possessing all the qualities that can, humanly speaking, be expected of those exercising the great powers entrusted to them. These command the respect of even an unsuccessful litigant, for he realises that they have judgment and can judge. Far different, however, is it with the political hacks, dirt-eaters, and lick-spittles who are pitchforked on the Bench to degrade it. Their business is to judge, and they are supposed to have the necessary education, but as they haven’t got it, and know nothing of even the most elementary scientific points, they cannot distinguish between honest “expert witnesses” and the shady ones who get “Sirs” tacked to their names and lie in proportion to their pay. If we cannot hope for an abolition of the barrister humbug, we may at least look to abolishing the system of promoting political and

other failures to judicial positions for which they are utterly unfit, and all who have studied the manning of the Bench in recent years must feel that most of the late appointments are a disgrace to the Bench and a danger to litigants.

#### THE CODIFICATION OF THE LAW RELATING TO PUBLIC HEALTH.

At the annual meeting of the Sanitary Inspectors Association at Leeds, Mr. R. W. Evans, LL.B. (Halifax), read a paper on this subject. He said that one word only described the present state of the law relating to public health, and that was chaos. The standard work which most of them now use in discharging the duties of their respective offices—viz., “Lumley’s Public Health,” by Macmorran, which until recently rivalled in size the old-fashioned West Riding Family Bible, had now developed into two substantial volumes, containing 1,528 pages. He had taken the trouble to count the number of statutes which either directly or by incorporation regulated their work, and the total came to the astounding figure of 161. Of these, they might call 28 principal Acts, occupying the first volume, and 133 subsidiary or incorporated Acts, set forth in the second volume. Nor was this all; when they had got their 161 statutes, the question arose, what on earth did they mean? The Courts had to be resorted to, and the judges had to endeavour to extract sense out of nonsense, consistency out of inconsistency. How does this apply to Public Health Law? He found that Mr. Macmorran referred in round figures to no less than 5,500 decisions, many of them irreconcilable, which had been given in the endeavour to find out what Parliament really intended when it passed the various statutes. How could a system of law enshrined in 161 statutes, interpreted by 5,500 decisions, be easy of access? The vicious principle so frequently adopted in our legislation of incorporating by reference other statutes was rampant in Public Health Law. (Hear, hear.) Instead of an Act being complete in itself, the provisions of other statutes were incorporated by reference, and in order to find out what the law was, they had to refer, not only to the Public Health Act, but to one or perhaps more other statutes. Let him give an instance of this from his own experience. Recently he was concerned in a case where a local authority sought to recover water charges. A simple matter, one would think. On reference to the Public Health Act, you find that to recover water charges you must adopt the procedure laid down in the Waterworks Clauses Acts, 1847 and 1864. On referring to the Waterworks Clauses Act, 1847, you find there that to recover a water rate under £20 you must adopt the procedure laid down in the Railway Clauses Act, 1845, and on going to that Act, you find the simple solution that you can recover the rate before two Justices. But that was not all; if you refer to the Act of 1863, you find that there is an additional remedy given, by which you may also proceed in the County Court or the High Court. That was to say, to settle the simple question how a local authority was to enforce payment of a 5s. water charge, you have to refer to no less than five Acts of Parliament. (Laughter.) Again, was this branch of law reasonably free from doubt? If it had been, would the reports have been burdened with the 5,500 decisions quoted by Mr. Macmorran? Codification, in his opinion, was the only effective remedy. Let the statutes, with the thousands of decisions thereon, be referred to an expert or body of experts, unfettered by any political considerations, with instructions to embody in one Bill the existing statutory law as now judicially interpreted. (Applause.) If this Bill could then pass through Parliament as it left the Parliamentary Counsel’s office, without being damned and rendered unintelligible by private members’ amendments, he dared venture to say we should have a workable, clear, and systematic measure. (Applause.)



Legislation such as this, he feared, was not sufficiently heroic or ambitious in the present state of party government. A Government did not like its policy to be described as one of sewage. (Laughter.) There was no electioneering cry to be made out of drains and sewers, nuisances, and private street works. It affords no scope for offering a bribe to one class at the expense of another class, the favourite modern form of electoral corruption. (Applause.) Perhaps some of them might live to see the time when heroic legislation would give place to useful legislation, and party interests give place to national interests, and when that golden age shall dawn, then he felt sure that the laws relating to public health would receive the consideration which they merited. (Applause.)

#### OLEOMARGARINE AND THE FEEDING OF FAT.

THE problem of nourishment in wasting disease is perennial. In most instances the balance between waste and repair is greatly to the credit account of the former, despite all the resources of the medical art, direct or indirect, and whether adopted with a view to increasing nourishment or limiting elimination. Not the least of the difficulties that confront the practitioner is that of securing the full co-operation of the patient, for in sufferers of this class Hope is constantly present, along with more or less disbelief in the conclusions drawn by the medical attendant. It is rare to find a consumptive who believes his vitality is already sapped, or his life seriously in danger; and such a patient will insist upon yielding to the caprices of appetite, and on assuming that he has plenty of time before him in which to decide regarding measures that, though vital, seems to him at the moment wearing or obnoxious.

With the first introduction of cod-liver oil it was believed that the problem of nourishment in wasting diseases was solved; and this agent to-day continues to be the favourite, under the supposition that it offers the greatest possible results both to prescriber and patient, with a minimum of objectionable features. But there is nothing magical about this oil; save as an easily digested form of fat it is valueless, notwithstanding the many preparations of the so-called derivatives, active principles, glucosides, etc., which are offered to delude practitioner and patient, and which, after all, are only the ptomaines of decomposition. Again, cod-liver oil is by no means the best form of fat, as has been shown on various occasions by Fothergill and others. There are few instances where the digestive organs will tolerate for any prolonged period a diet of this or any other unpleasant or pronouncedly flavoured fat, despite the various attempts of the art to make them palatable. Indeed, nowhere is the truism of "one man's meat" being "another's poison" more apparent than when one assumes the management of wasting disease. And it may be mentioned here that mineral oils which are sometimes recommended as substitutes are utterly devoid of even the semblance of nutritious properties, while vegetable fats generally are very inferior to those derived from animal sources.

Fothergill expresses a most sensible preference for natural food fats—butter, fat pork, suet, etc.; and the benefit that consumptives often derive from winter residences in lumber camps is not due so much to the boasted balsamic air as to the capacity that is thereby developed for consuming and digesting enormous quantities of hydro-carbons. This fact is often lost sight of by medical men, who counsel their consumptive patients to spend their winters in the mild or enervating climate of the tropics or sub-tropics.

In everyday life, butter is ever essential; it is not regarded with the loathing that accrues to an article of food that is popularly classed among medicaments, and consequently its free use by sufferers from wasting disease is to be encouraged to the utmost in so far as it can be borne. All this seems very simple, but unfortunately an excess of butter diet even in a healthy

organism is apt to give rise to butyric dyspepsia, with so-called "water-brash," "pyrosis," "heartburn," etc.; and butyric fermentation is set up largely through the presence of a ferment—a residuum left by the buttermilk—which should theoretically be absent, but which in practice it is impossible wholly to eradicate. This latent (lactic) ferment is the cause of decomposition—frowsiness, etc.—in butter, and thus renders the products of the best dairies deficient, from a digestive standpoint. Excessive washing, moulding and mixing is always an injury to butter, inasmuch as it results in disarrangement of the relations and proportions between oleic and margaric acids, and often—as with creamery products—gives a salve-like appearance and consistency not at all conducive to appetite.

Considering the foregoing, it seems strange that oleomargarine has not been thought of as a palatable and suitable article of diet for those suffering from wasting disease. It is free from all objections, despite the idle and malicious tales industriously spread by parties interested in securing high prices for inferior and unwholesome dairy products—were the truth fully realised by all classes, bad butter would find no market; but unfortunately the majority of the people have no comprehensive idea as to what oleomargarine is.

Méige-Mouries, the official chemist under the late French Empire, with a view of giving the poor and seafaring people an article that would be wholesome, nutritious, cheap, and at the same time capable of being kept for unlimited periods of time, while working at the Imperial farm at Vincennes sought to imitate the process supposed to take place in the bovine economy when cows are under-fed and the butter furnished is derived from their own fat. The process he invented is practically the same as that employed to-day.

First, the very best quality of *fresh* suet, finely comminuted, is placed in a steam-heated tank along with a small amount of bicarbonate of potash and the stomachs of sheep or pigs, and retained at a temperature of 132 deg. F. for two hours or more, or until the stomachs have succeeded in dissolving the fat membranes, and the fat itself has risen to the top.

Second, the fat is drawn into another tank and two per cent. of salt added, while it is maintained at a slightly higher temperature; and after a short time the fat becomes clean, takes on a yellow colour, and presents both the taste and odour of fresh butter.

Third, the fat is again drawn off, and after cooling is cut in pieces, wrapped in linen, and placed in a hydraulic press at a temperature of 177 deg. F., whereby it is separated into two portions—stearine and oleomargarine. The former goes to the candle-makers; the latter is artificial butter, theoretically and chemically. Of course, different manufacturers vary the process according to individual ideas and needs, and some use pepsin direct instead of obtaining it through the medium of animal stomachs; nevertheless the principle is the same on all occasions.

The resulting product, as a matter of fact, is a better and purer butter than nine-tenths of the dairy product that is marketed, and one that is far more easily preserved. No one, however expert, can detect the difference between "oleo" and the best dairy butter, except, perhaps, after a long diet of the former he must suspect the latter, owing to the faint acid flavour due to the lactic ferment that properly should have been removed. To be sure, everyone imagines it possible to distinguish "oleo" from dairy butter by taste alone, but in truth differentiation is very hard to accomplish by any process, even by the expert chemist, with all the most elaborate laboratory means at his disposal.

There are a large number also who imagine oleomargarine is made from any old scraps of grease, regardless of age or cleanness—which is quite the reverse of the fact; indeed, a good "oleo" can only be had by employing the very best and freshest of fat. This "arti-



ficial butter" is as purely wholesome (and perhaps even better as food) as the best dairy or creamery product. Some, while the "oleo" is fluid and at high temperature, with a view to improving flavour, add milk, water, and salad oil. In any event, it is imperative upon the manufacturer that the greatest hygienic precautions be constantly employed. Consequently, artificial butter, or "oleo," is not only, as just remarked, equal to genuine butter in flavour and fully as nutritious, but greatly superior to the latter in being freed from lactic acid, whereby it is less liable to become rancid and form a harbouring place for bacteria. Recently Jollies and Winkler, who are the official chemists for the Austrian Government, after a very thorough investigation, announced through the columns of the *Zeitschrift für Hygiene* that the only germs ever present in "oleo" are the varieties common to air and water; although carefully sought for, tubercle and other obnoxious bacilli were conspicuously absent. They also found that the dairy product is especially liable to be contaminated, inasmuch as the best process of manufacture fails to eliminate all the lactic-acid ferment, the action of which even salt cannot neutralise save for a very brief period.

It may here be added that the greatest producers of "oleo" are also the greatest individual consumers thereof, for the reason—as one expressed himself to the writer—they "know what is being eaten, and have the assurance that it is always thoroughly clean"—an assurance that can never be depended upon regarding any dairy product.

"Dairy butterine," so-called, is only the attractive title given to an "oleo" put up neatly in rolls in a gauze envelope. There is, however, a cheap product denominated "butterine," sold at a much lower rate than true "oleo," which is merely a mixture of the latter and neutral lard; even this, if made from strictly fresh material, is not necessarily objectionable. Those products denominated oleomargarine, butterine, etc., which are of rank character, do not emanate from reputable factories, which are invariably connected with beef-packing houses, but from petty manufacturers, who accept fats of all kinds that are rejected by the regular oleomargarine makers. The very fact that an "oleo" offered is devoid of unpleasant odour or flavour is evidence sufficient that it is a genuine article and made only of the freshest and purest fat. Another thing regarding "oleo" is that from the time the fat is placed in the melting-vat until it is laid before the consumer as an artificial butter—the adjective "artificial" is certainly superfluous, from a chemical standpoint at least—the entire process is one of the greatest cleanliness, and the product is never by any means allowed to have the taint of human hands, and for market purposes is further protected by an envelope. Finally, it may be added that a large proportion of the material at the present time marketed as pure butter, and emanating from country dairies and creameries, is but a mixture of cheap "oleo" and dairy butter.

It is surprising the amount of fat that a consumptive finds it possible to consume when employing "oleo" instead of butter, and it is by no means essential that the individual shall be informed that the product of the packing-house is not derived from the dairy if he is likely to have any prejudices in this respect.

#### A MINISTRY OF HEALTH.

WE are glad to find that to a reform we have long advocated Sir B. W. Richardson has contributed some suggestions. At Leeds, on August 21, at the annual meeting of the Sanitary Inspectors' Association, a paper by Sir B. W. Richardson was read.

Some twenty years ago, Sir Benjamin wrote, he raised the question whether we ought not to have established in our country a Ministry of Health, with its President, chiefs, and other officials—an establishment that should rival the British Museum or any other institution devoted to the public service. For some reason or

other the subject had dwindled, and therefore he wished once more to revive it, and with their aid to push it forward. He said then what he repeated now, that the basis of a Ministry of Health was already laid. He did not think there could be two opinions on the subject that the basis lay with the office of the Registrar-General. That office, amended in name and in function, supplied all that was required as a nucleus. The work of estimating life and death which now went on there was the true foundation of all their efforts. This work ought to remain as the foundation. It might admit of being improved and widened, and some thought that it ought to be. He had nothing to say on that matter, except that, if all else were half as good and perfect, they should be in the way of rapid and safe progress. It was by modifications of, and additions to, this Department, as it now existed, that the new official and Governmental institution for which he pleaded should be established. The modifications and additions were not, after all, many; and they were, he believed, all practicable. They would introduce nothing actually new, but would bring together what was already extant. The Department would be no longer for mere registration, but would include all that related to health. Correctly re-named, it would be a Ministry of Health, or a State Department for Health. The shortest, and at the same time the most distinctive, title would be the Ministry of Health; and in accordance with this, the head of the Department, instead of being called the Registrar-General, would be called the Minister of Health. There was a good deal in securing this title. It would give dignity to the office, and would fix the office in the minds of the people as an office which they understood, and which they respected—an office closely associated with all that was of most vital interest to them and to theirs. The construction and duties of the Ministry of Health would lead to several divisions of labour. In addition to the duty of collecting the registrations of births, deaths, and marriages, the Ministry of Health would collect the registrations of disease throughout the kingdom. A complete system of registration would be established, and the returns supplied by it would include not only the diseases affecting human kind, but the diseases affecting animals and plants in every locality. To the same Ministry the reports of meteorological conditions would be duly sent from all the observatories. To this Ministry would be intrusted the collection and arrangement of another set of returns, which, important as they were, were now practically lost. He meant the returns of the Coroners' Courts. These documents were invaluable as signs of the moral and physical states of the people; for no complete estimate of the health of the nation and the causes of its prosperity or decadence could be supplied if the catalogues of deaths by violence, accident, and design were left out of the record. To the Ministry of Health would be referred all the work that was now carried out by the medical department under the control of the Local Government Board. The working of the Act that dealt with the subject of adulteration, and that carried out public analyses, would of necessity be brought under the direction of the Ministry of Health. There was, at present, much confusion in the inter-working of the Public Health Acts, and the supervision of the factory hands under the Factory Acts. The factory medical inspectors, who knew the duties of sanitary work in the great manufacturing better than any other class of men, and whose functions were of longest date, were crippled in their efforts by the circumstance that their supervision was too limited. It was of such vital importance to the nation that the health of the great industrial population should be completely attended to, that, as it seemed to him, all the sanitary supervision of the factory should be transferred, under proper regulations, to the factory surgeons. If this were done, the officers appointed under the new regulation would specially report to the



Ministry of Health on the sanitation of the factories in the whole of the kingdom. He knew of nothing that required more serious consideration than this public question. It was at the present moment a critical question of the first order. The mortality incident to industrial pursuits was a drain on the national vital wealth which stood before emigration in importance, and was a source of silent disaffection which no one could comprehend who had not inquired into it with intelligence, and at some cost of labour. To the Ministry of Health would be transferred what had hitherto been done by the Veterinary Department of the Privy Council, and to it would naturally be referred the sanitary arrangements of prisons and of the establishments of police. Lastly, to a Ministry of Health there would, of necessity, be attached a direction having reference to the sanitary construction of all public works that would be carried out by the Government at its instance and expense. This function would relate to public buildings chiefly, but it would include therewith many other works, such as the laying out of roads, parks, and gardens, after the most healthy fashion. It would, in fact, embrace all designs and works which were under the control of the Chief Commissioner of Public Works. In the carrying out of these plans the Government would be not only the servant of the public, but its example and its teacher. The question of organisation was then dealt with. To each department there would be a chief, and the whole, under the Presidency of the Minister of Health, would form a Council of Health appointed by the Government for the Government and the people.

The Chairman, after reading the address, said it was a very important and very interesting paper. Sir Benjamin pictured a state of affairs which, he thought, they all should wish to see, and the only way to get these things accomplished in time was to have them well ventilated and well discussed. (Hear, hear.)

#### STANDS ENGLAND WHERE IT DID?

At first questioning every Englishman would be startled, but it is one worth asking. It is only a short time ago that a citizen of a twopenny-halfpenny State, Major Lothaire, hung in cold blood and robbed an Englishman, and the murderer not only walks about unpunished, but is about to return to the scene of his cowardly murder. We heard of some Englishmen hooting the cur lately at Ostend, but that sort of thing is rot, and, so far as we know, he is not yet dangling at the end of a rope, as did his victim.

We have no admiration for Mr. Ben Tillett, Alderman of the London County Council, etc., but that does not blind our eyes to the fact that if we allow tinpot kingdoms to give us an inch of insult and wrong because they are too contemptible for notice, they may credit us with fear and take an ell. Mr. Tillett may or may not be a poor creature, but that is beside the question. He is an Englishman, and for our own honour and the protection of other Englishmen who may have to travel in that tin-pot kingdom, we should compel Belgium to apologise handsomely in the only way that will affect it—through its pocket. If Lord Salisbury be too busy reckoning up how much profit his Wardenship of the Cinque Ports will bring him to care for England's honour and prestige it is not improbable that Englishmen of a real patriotism may think it advisable to kidnap Lothaire as Lothaire did Stokes, and incontinently string him up; and when next His Majesty the King of the Belgians comes on his usual lecherous and lascivious mission to England—the only mission that brings that Kinglet to our shores—we trust he may meet with a *quid pro quo*. It would be folly to hold him to ransom, for Belgium doesn't want him, and wouldn't waste twopence on him, but a night in one of General Booth's shelters, with its attendant attentions from the General's selected "Norfolk Howards," might be a

good lesson to him, and it is about time he got it. Belgium has rubbed it in rather more than the most pacific Englishman, Irishman, Scotchman, and Welshman can bear, and on the top comes a request from a person of the name of Dredge, asking us to give a gratuitous advertisement to a Belgian exhibition. Well, we have given it above. Other journals have published Mr. Dredge's appeal. We prefer to publish what we think.

#### THE "MANCHESTER COURIER" ON SANITARY INSPECTORS.

THE debt of gratitude London owes to the sanitary inspectors of its food supplies, says the *Manchester Courier*, on August 25th, is very far from being generally known, and if it were known it would be difficult to give it anything like adequate expression. For months past the weekly record of summary convictions they have secured against unscrupulous purveyors of diseased and unsound meat in particular has been showing a steady increase; but their disclosures in connection with the composition of a certain class of meat pies, sausages, and other viands whose ingredients are of a similarly mysterious nature, have of late been positively startling. It is undesirable to go into the nauseous details of these revelations, but it may be said in general terms that the frequent seizures of putrid meat which these officers find in the very act of being converted into pies and sausages do not fully illustrate the worst secrets of some of the tradesmen in these edibles. The Continental custom of substituting horseflesh for beef, whether openly or unacknowledged by the vendors, is largely on the increase in the poorer quarters of London, and although sound horseflesh may be vastly preferable to unsound beef, it is well known that none but decayed, and often diseased, horses are ever systematically slaughtered either for cat's meat or for man's. The result of this growing custom is that not a few of the "mutton" pies and "beef" sausages sold in some of the London slums are not only composed of horseflesh, but of diseased horseflesh. The magistrates are beginning to wake up to the enormity of this kind of fraud, and sentences of imprisonment, without the option of a fine, have accordingly been imposed upon such offenders; but until penal servitude becomes the recognised penalty, the reputation of comestibles of the beef sausage order will in the cheaper markets continue to be seriously at stake.

#### THE "THAT" STORY AGAIN.

NORTH London Police-court was the last place where the "that" story was chesnuttled. It was in the case of John Davis, St. Ann's-road, Stamford Hill, who was summoned for selling as butter an article certified by the Analyst to the Middlesex County Council to contain 70 per cent. of foreign fat.—Mr. Arthur Liddell Bridge, inspector under the Food and Drugs Act, said he made the purchase, and added that the defendant had not long been in the shop.—Mr. Paul Taylor: It is perhaps fortunate for the people that it is thus early found out.—The defendant, who was represented by Mr. Windsor, pleaded that the article was margarine, and was sold as such; but the ticket had slipped off. He also said that the inspector asked for half a pound of "that," and did not mention "butter."—The Inspector denied this.—Mr. Paul Taylor said the poor people must be protected, and fined the defendant 40s. and 20s. costs.

We don't object to a useful "that," such, for example, as that that Mr. Bridge has just given. Every dent in a milkman's measure (he told Mr. Paul Taylor, at North London Police-court on Saturday) means a diminished quantity for the purchaser, and, of course, an increased profit for the milkman. And he cannot get a conviction against such fraudulent milkmen unless he can show that the damage to the measure was wilfully caused.



## WE WANT SOME FAIR PLAY.

FOR several years we have written with all our might against brewers' and distillers' swindles. We have suffered monetary loss by boycotting and the usual methods of those who profit by swindles and hate those who expose them.

To the public analysts, local authorities, Food and Drugs Act inspectors, and readers of our journal generally, the following from the last issue of the *Mark Lane Express* will read as rather unfair:—

Our readers will recall some of the efforts we have made for many years to put the duty chargeable upon other material than malt used by brewers upon a fairer basis than has prevailed since 1880. No other newspaper has dealt with this subject so fully and comprehensively as we have done, and we congratulate the whole agricultural interest upon the success that has at length crowned our efforts in the interest of barley growing. We have secured a double result. Not only must brewers hereafter specifically declare in the returns to the Inland Revenue the actual materials they use, but should they displace barley-malt with rice, maize, or any similar compound or preparation, this material must be charged on what is called the sugar basis, and not as malt. This means that on every 28 lbs. of flaked material the duty will be equal to that formerly paid on 42lbs., and that most unfair competition which substitutes entered into with barley is now removed. Such change is a matter of peculiar pride to us, and ought to indicate to all sections of the agricultural interest the power we possess as their exponent. *No other journal has pointed out the desirability of this step. We have stood alone, steadfastly maintaining the principle involved, and have borne down all opposition.* It would be difficult to point out a stronger instance of right overcoming might. We have based our arguments purely upon facts and justice, and nothing we have advanced has even once been refuted.

We have contended that brewers ought not to use other materials than malt in the manufacture of beer without declaration. They must now make separate entry of all material used. We have held that the duty payable by varied material has been unfairly assessed. The materials are now more equitably balanced. All preparations of rice and maize must now pay duty on the higher scale.

These are steps in the right direction, and we are proud of our position in the matter. *The points gained have been secured by our advocacy, backed up by the unquestionable arguments of our talented contributor "Hordeum." Our contemporaries have all stood aloof, but we have no doubt that every one of them which has the best and highest interests of agriculture at heart will join with us in congratulating the Government in so cleverly and discreetly carrying this matter to a successful issue.* The promise that the classification should be made was given at the close of the debate on the Pure Beer Bill, and this has been carried out by means of newly-arranged Inland Revenue forms; and the Government, by including a clause in the Finance Act, has taken advantage of the change by requiring substitutes to pay duty on a basis which is more equitable to barley.

Suggestions will doubtless be made that brewers will resent this interference with their liberty, and that the sole effect will be to drive them to use larger quantities of foreign barley. This will possibly be true in a few instances, but as a whole brewers are a large-hearted class, and their profits are so good that they will not object to what they know to be an act of justice to barley-growers and maltsters. The bitter and threatening language of the *Brewers' Journal* does not really represent brewers' feelings, although it may express the views of the numerous advertisers of substitutes for malt who so largely use that organ. Foreign barley will not be used unless it affords most gain. The

brewer brews for profit, and he will then, as now, use either malt or substitutes, or English or foreign barley, that may for the time offer the greatest. Farmers need fear nothing in this direction; on the other hand, they may congratulate themselves on a victory.

Our contemporary might at least have acknowledged that in the effort to give fair play to English industries, and in the persistent exposure of the injustice to native agriculture done by the Somerset House *ignorami* we have fought vigorously. We do not say we have done everything for pure beer, as does the *Mark Lane Express*, but we have borne our share of the fight, and intend to bear it, and we are not avaricious in asking for a little fair play.

## ARTIFICIAL CIDER.

DESPITE the exertions of Mr. Radcliffe Cooke, M.P., cider drinking is not making much headway, which is scarcely to be wondered at, seeing the swipes that masquerade as cider. The American liquid is made from one of the following formulas:—One hundred gallons of water, five gallons honey, three ounces powdered catechu, five ounces alum and two pints of yeast. Allow it to ferment for fifteen days in a warm place and then add one half-pound bitter almonds, one half-pound cloves, two pints brown sugar, and some alcohol. If the preparation be too acid correct by adding a little honey or sugar; or if too sweet by adding sulphuric acid, or, preferably, cider vinegar.

A cheap imitation is made from water, thirty-five gallons, sulphuric acid sufficient to make pleasantly sour; brown sugar, fifty pounds; alum, four ounces; ginger, five ounces; cloves, five ounces, and bitter almonds, six ounces. Boil the last four ingredients in two gallons of water, for two hours; strain and add to other water. Burnt sugar may be used for colour if desired. Body is given by adding whisky.

## THE OYSTER SCARE AGAIN.

We are now gravely informed that three gentlemen are lying seriously ill at Ipswich from typhoid, *which is attributed to eating oysters.* Mr. Raymond George Bennett, son of Councillor Bennett, builder, and Mr. Tom Bennett, with another gentleman, obtained the oysters while yachting off the Essex coast. Mr. Raymond Bennett and Tom Bennett ate of them, but the third gentleman abstained. They brought a few home for Mr. Arthur Field, son of an Ipswich architect, who ate some, and was also taken ill. If people will, from motives of economy, eat putrid or tainted fish, flesh, fowl, or red herring they may expect illness. We are growing tired of this oyster and typhoid bunkum. It was begun by Mr. Ernest Hart, of the *British Medical Journal*, as an advertisement fake. It served its purpose, and we have since often rejoiced in cheapened oysters, but what is notoriety to Mr. Hart is death to some English industries, and it is about time the humbug died. Shellfish don't suit all persons, and are poisonous to some. Ernest Hart, we know, is "pizen" to many, but that is no reason why he should be sworn at as "pizen" to all, and the measure of justice meted to him he ought to mete to oysters, mussels, lobsters,

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crabs and other shellfishy customers. Meanwhile, if a scare begins again at Colchester or Whitstable, and there are too many oysters unwanted, we know a good score of scientific men who are prepared to brave typhoid, and who will be willing to work their way through as many barrels as the natives care to send for experiment.

## CORRESPONDENCE.

### MR. JUSTICE WILLS ON ANALYSTS.

*To the Editor of FOOD AND SANITATION.*

SIR,—Referring to your paragraph on Analysts' Differences at the late Birmingham Assizes, allow me to say we have been most unjustly attacked. The only samples which could be at all compared were from the Pool, and here there was a practical agreement, although about two months had elapsed between the two samplings. I had none of the other samples submitted to (not taken by) Dr. Hill, and to these I objected as unfairly collected.

The only real difference between Dr. Hill and myself was that Dr. Hill, who had not personally inspected, considered that the trace of animal matter in the Pool water was due to the defendant's sewage, whereas I said it was natural to the ordinary supply of the Pool, and gave my reasons why it could not be fairly attributed to the defendant. It was admitted by the plaintiffs that there had been no pollution from the defendants for nearly 12 months, and I say whatever pollution had taken place from the defendant's had disappeared, and I still say that the Pool was no worse when I examined it than it would have been had the defendant's sewers been 100 miles away. The extra vegetable growth of the last two years, alleged by an engineer to be due to feeding by sewage, was, in my opinion, the natural consequence of two exceptionally hot and dry summers.

I exhibited and observed no display of undue partisan spirit during the case, and certainly I repudiate the charge of exaggeration.—Yours truly,

Public Analyst's Laboratory, E. W. T. JONES.  
Wolverhampton.

### A CURIOUS BUTTER CASE.

MR. W. H. S. CRABTREE, an inspector appointed by the County Council under the Sale of Foods and Drugs Act, laid an information against Young Speak, grocer, Knowlwood, Todmorden, for selling adulterated butter.—Mr. Crabtree stated that on Thursday, July 23, he visited the defendant's shop at Knowlwood-road, Todmorden, and asked for a pound of butter. The woman in charge served him from one of two piles which were on the counter, for which she charged him 1s. Witness asked what was the next pile, and the woman said "butter." He thereupon asked for half a pound, and she charged him 6d. for it. He told her that the butter was intended for analysis, and she consented to its being divided into three parts in the usual way. On August 9 witness received the analyst's certificate, which stated that the second sample contained 15 per cent. of real butter and 85 per cent. of margarine; the first sample, viz., the pound, proved correct.—Cross-examined by Mr. Sager: The woman did not inform me from where the second purchase had been obtained.—Mr. Crabtree's assistant gave corroborative evidence.—Mr. Sager, for the defence, said that Speak had no reason to believe the article was other than as he sold it to the prosecutor. At the time the butter was purchased a receipt (produced) was obtained from the seller, but that receipt was not in law a sufficient warranty to bring it within section 25 of the Act of 1875. On June 25 last Speak purchased the butter in question from Thomas O'Connor, who said that his brothers, in Ireland, were sending him the butter for sale; the *bona fide* price given, viz., 10d. per pound, proved that the defendant was satisfied that the article was what the vendor represented it to be. Defendant had been in the trade for seven years, and except on two occasions had purchased his butter from wholesale dealers in the district; to his misfortune,

he dealt with strangers on this occasion. He had since tried to trace O'Connor, in order that he might call him as a witness, but his efforts in this direction had not been successful.—The Chairman expressed the opinion that the receipt produced looked suspicious, inasmuch as it did not give the vendor's residence; that of itself ought to have warned defendant that there might possibly be something wrong.—The defendant said that he had not seen the man before. He was an Irishman, and he said that he was getting the butter sent from his brothers, who were farmers in Ireland. He gave him an order for a creamery butter, and he brought it on the following day. He weighed the butter and turned it out and tried it; the man said that if it was not all right he would take it back. There was nothing to show who had made the butter. It was put up in the ordinary way of creamery butter. He paid for it the same day. He said that he was going to go over the district once a month, but he had not been since. Creamery butter would keep five or six weeks. The butter was in the same condition when the inspector called as it was when he turned it out. The man said he had sold several cases in Todmorden. He inquired from grocers in the town if such a man had called upon them; he also made inquiries in Burnley, but could not find anyone to whom he had sold any. He bought his butter from tradesmen in Todmorden generally.—By Mr. T. E. Sutcliffe: I should have to pay 10d. or 10½d. a pound for the same kind of butter in Todmorden.—By Mr. James Sutcliffe Thomas: The butter would not be so fresh when the sample was taken as when it was turned out.—There were two previous convictions against the defendant for breach of the Margarine Act.—The Chairman said that the offence was a serious one, and the Legislature had marked their sense of it by making the penalty so high as £20; the man did not show the suspicion he ought to have done, but they were inclined to be very lenient with the defendant, and would impose a penalty of £1, and £1 4s. costs.

### MARGARINE.

At Keighley, on August 18, Thomas Pedder, grocer and confectioner, South-street, was summoned (1) for selling as tub butter a substance containing not exceeding 5 per cent. of real butter, and not less than 95 per cent. of margarine; (2) exposing margarine for sale without label clearly visible to the customer; and (3) for selling 1lb. of margarine in a wrapper not having upon it the word "margarine." Defendant pleaded not guilty in each case.—The prosecutions were taken by Mr. Arthur Randerson, the local inspector under the Food and Drugs Act.—Mr. Randerson said that on Friday, the 10th ult., he visited the defendant's shop and asked if they had any tub butter. Defendant replied "Yes; we have." He then asked for 1lb., and was served and paid 10d. for it. He then told defendant he was an inspector under the Food and Drugs Act, and was going to send a sample to be analysed. Defendant immediately turned round to him and said, "I would rather you would let me have it back, and I will return the money." He then called into the shop his (witness's) assistant, who was outside, and in his presence the defendant again asked him (the inspector) to let him have the "butter" back, and he would return the money. Defendant said it was margarine. Witness then asked Pedder how it was that, if he knew it were margarine, he had not sold it in properly stamped paper. Defendant replied, "I have bought it for years as margarine, but I have sold it for years as tub butter, and I have never put it in stamped paper." Witness then drew his attention to the fact that the dish containing the margarine was not labelled, and asked where the label was. Defendant said that they had a label somewhere about, but there was such a small quantity of margarine on the dish that they had not been very particular about the label. Defendant looked about for the label, and eventually found it between a tub and a small box, which latter was covered over with a cloth. Defendant refused to accept a sample when witness divided the margarine he had bought for analytical purposes, and he (the inspector) therefore sealed it and subsequently sent it to the county analyst, whose certificate stated that the article contained not exceeding 5 per cent. of butter and not less than 95 per cent. of margarine.—Defendant (to inspector): Didn't I say, before you purchased it, that it came in a tub, but was labelled margarine?—The Inspector: After the purchase was completed you told me that it was margarine, but that you had sold it for years as tub butter.—Defendant: I did nothing of the sort, and I have witnesses to prove what I say.—Mr. Joseph Smith, assistant inspector, corroborated Mr. Randerson's evidence.—Defendant, in defence, maintained that he told the inspector before he made his purchase that



it was all margarine he had in the shop, and that he did not sell any other kind of butter. As to the label, that had dropped off when the cloth covering the margarine was removed. The wrapper was certainly not labelled, "Margarine," but it was "butter" paper such as other people used, and he could go into one of the principal shops of the town where they used exactly the same kind of paper. He sold very little butter indeed.—The inspector observed that in the week in question margarine was selling at 6d. per lb, and the best butter from 9d. to 10d. Defendant charged him 10d. for the margarine.—This concluded the case.—In reply to the Bench, the deputy Magistrates' Clerk (Mr. Waddington) stated that the full penalty for each of the three offences was £20.—The Bench imposed a fine of 20s. and £1 4s. costs in the first case. In the second case, they would give the defendant the benefit of the doubt, as they thought it possible that the label might have been drawn off with the cloth. They, however, ordered him to pay the costs, 12s. In the third case, a fine of 20s. and 13s. 6d. costs was imposed. The total amount of fines and costs (including the inspectors' fees) was £49s. 6d.

#### STARCH IN MILK—THE VALUE OF A SOMERSET HOUSE CERTIFICATE.

At Dublin, on August 21, before Mr. Swifte, the hearing was resumed from former days of summonses against two contractors for the supply of milk to the South Dublin Union Workhouse, which was not according to contract in consequence of adulteration.—Mr. Rice, solicitor, prosecuted on the part of the Corporation, and Mr. Fraser, Master of the Workhouse, at whose suit the summonses had been issued, was in attendance.—Sir Charles Cameron, on whose analysis of samples of the milk the prosecution had been instituted, was present.—The first summons was against Mr. John Kinsella, of 70, Pill-lane, and alleged that on June 10 the defendant supplied new milk adulterated with at least 16 per cent. of water and 2 per cent. of starch. A certificate to that effect had been given by Sir Charles Cameron.—Mr. Rice said that in this case a sample had been sent for analysis to Somerset House, and the report from that department referred to a change having taken place in the milk, and stated that the sample afforded no evidence of added water, but that one-sixth of 1 per cent. of starch had been added. Sir Charles Cameron was prepared to give evidence in support of his certificate.—Mr. Gerald Byrne, who appeared for defendant, objected to any explanatory evidence being given by Sir Charles Cameron.—Mr. Swifte ruled that no further evidence could be given.—Mr. Rice asked to have an opportunity afforded him of cross-examining the analyst of Somerset House.—Mr. Swifte: The Act gives power to cross-examine the local authorities, but says nothing about those of Somerset House.—Mr. Byrne: Somerset House is the highest authority in the country.—Sir Charles Cameron: They are not.—Mr. Byrne: I must object to this. They are the recognised Court of Appeal with respect to these samples.—Mr. Swifte said he had no power to summon the Somerset House analyst here. He would state a case for Mr. Byrne if he wished it.—Mr. Byrne mentioned that at the former hearing he produced a certificate from Professor Tichborne, who stated that there was no added water in the sample.—Mr. Rice said the certificate of Prof. Tichborne stated that the milk was deficient in butter fats, but was adulterated with starch. If the milk contained starch, water must have been used to make the starch blend. The analysis at Somerset House was made six weeks after that of Sir Charles Cameron, and as regarded starch the latter was backed up by Professor Tichborne's certificate.—Mr. Swifte said the delay might explain the discrepancies between Sir Charles Cameron's certificate and that of Somerset House. All the analysts agreed as to the presence of starch in the milk, but only differed as to the amount of it. He (Mr. Swifte) said on a former occasion that he would put on a substantial penalty if any adulteration at all should be shown in a case like this where milk was supplied in large quantities. Were there any previous convictions? It was found that on the 22nd February, 1895, a fine of £5 was imposed on the defendant, and on the 23rd August another fine of £3.—Mr. Swifte said that having regard to the evidence as it stood in the present case, the amount of starch adulteration reported by Somerset House being so small, he would only impose a fine of £3, with 10s. 6d. analyst's fee.—A second summons charged Mr. Kinsella with having, on the 11th June, supplied milk to the workhouse adulterated with at least 20 per cent. of water and 1½ per cent. of starch. Sir Charles Cameron's certificate to that effect had been put in, but there was no

certificate of analysis offered on the part of the defendant, and no sample had been sent to Somerset House.—Mr. Swifte said it had been proved that 20 per cent. of water had been added, and he would impose a fine of £10, with 10s. 6d. analyst's fee.—The case was then taken up of an adjourned summons against Mrs. Margaret Cullen, of 26, North King-street, which alleged that she supplied to the guardians milk adulterated with 16 per cent. of water and 3 per cent. of starchy matter on June 10. A certificate of an analysis by Professor Tichborne had been put in on the part of the defendant, and a third sample had been sent to Somerset House.—Mr. Friery appeared for the defendant.—Mr. Swifte said the report of Somerset House was that the sample contained one-sixth of one per cent. of starch, but no water.—Mr. Friery: Professor Tichborne's certificate is that there was no added water; and on that your lordship sent the case to Somerset House.—Mr. Rice said this defendant was fined £5 in February, 1895.—Mr. Friery: She has positively stated to me that she put no water in the milk.—Mr. Swifte imposed a fine of £2, with 10s. 6d. analyst's fee.—A second summons charged Mrs. Cullen with having on June 11 supplied to the guardians milk adulterated with at least 20 per cent. of water and 1½ per cent. starchy matter. A sample had been sent to Somerset House, but the reply was that the milk was so decomposed that no analysis could be made.—Mr. Swifte imposed a fine of £1.

#### || THE ADULTERATED MILK CASES, SOUTH DUBLIN UNION.

To the Editor of the *Daily Express*.

Sir,—Owing to the technical objection raised by the clever solicitor, Mr. G. Byrne, for one of the defendants in the above cases heard to-day, I was precluded from giving any information as to the discrepancy between my certificate and that of the Somerset House chemists. I beg permission to give this explanation in your journal. On the 10th June I examined the milk in question, and certified that it was adulterated with 16 per cent. of water and two per cent. of starch. A duplicate sample was analysed by the Somerset House chemists and reported on the 27th July, or 47 days after I had found starch in the milk. They said they could not affirm the presence of added water, but stated that there was 1.6th per cent. starch present. I wished to explain yesterday that, in my opinion, starch could not have remained for 47 days in fermenting milk in the warm weather of last June and July without undergoing to a large or total extent conversion into dextrin and glucose. I have examined the residue of the milk analysed on the 10th June, and find that nearly all the starch has vanished. I find by experiments that starch in contact with solution of an albuminous substance such as is the case of milk soon begins to be converted into sugar-like bodies. The analysis made by the Somerset House chemists showed that the milk contained 8.6 per cent. of the non-fatty bodies and 2.4 per cent. of fats. The very poorest of milk contains, according to Somerset House Standard, 8.5 per cent. of non-fatty and 2.75 per cent. of fatty substances. To reduce 2.75 per cent. of fats to 2.4 per cent. requires either skimming or addition of water, but when I received the milk it was quite fresh, which would not be the case if it had been kept some time in order to be skimmed. My contention is that the milk was adulterated with water, and that the starch was added to give consistency to the thin milk. It is utterly opposed to common sense to believe that anyone would incur the trouble and expense of adulterating pure milk with starch. It is also opposed to common sense that starch would be put into milk without first boiling it in or blending it with water.

To my mind it is clear that by the prolonged action of bacteria in the milk the starch was largely converted into other materials, which were included with the other non-fatty matters and raised them to the quantity found according to Somerset House in the poorest pure milk. On this subject I give the opinion of two of the most distinguished analysts in the United Kingdom, both past Presidents of the Public Analysts' Society, and authors of some of the most valuable methods for determining adulteration. Mr. Otto Hehner says: "There cannot be the slightest doubt that starch will vanish from milk as soon as decomposition is active and bacteria flourish. This decomposition I would expect to dispose of the starch in a very short time if the starch had been more or less boiled, but much more slowly if the starch be raw."—Mr. Alfred H. Allen says: "In my opinion, the tendency of starch to undergo change in the presence of weak acids would invalidate any determination in milk which had been exposed to a summer temperature during several weeks. I should



not be surprised to find complete conversion of the starch into other products if left for some time under these circumstances. Not only would this happen in a liquid containing lactic acid, such as sour milk, but the presence of the ferments and organisms natural to and unavoidable in decomposing milk, would, in all probability, greatly accelerate the change."

It is the right of defendants in such cases to give evidence on their own behalf. The right was not availed of on this occasion—I am, sir, your obedient servant,

CHARLES A. CAMERON.

City Laboratory, Castle-street,  
August 21, 1896.

## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.*

(Continued from page 407.)

THE prices of the oils with a still higher test, as it is given in the above list. The oil "electric" is noted on the Amsterdam market about 3s. 9d. per 100 kgs. (= to about 125 litres) higher than the usual American oil. The price of the "Mineral Colza Oil" refers to a delivery of about 150,000 litres to the Dutch Navy in the months of September and October last year. These have been delivered by an Amsterdam firm for 14s. 2d. per 100 kgs. (about 120 litres, excluding the barrel). The following table by G. E. Davis might find a space. It was put together at the discussion about the question of the raising of the flash point in the Manchester section of the Society of Chemical Industry. Davis had brought up from retail dealers a lot of petroleum samples and examined them, with the following result, which I only partly give here:—

| Flash Point<br>(Abel). | Price<br>per quart. | Flash Point. | Price<br>per quart. |
|------------------------|---------------------|--------------|---------------------|
| 122 degrees F.         | 2d.                 | 86 degrees.  | 3d.                 |
| 108 "                  | 2d.                 | 86 "         | 1½d.                |
| 105 "                  | 4½d.                | 85 "         | 1½d.                |
| 104 "                  | 3d.                 | 84 "         | 1½d.                |
| 88 "                   | 1½d.                | 76 "(25 C.)  | 1½d.                |
| 87 "                   | 1½d.                |              | 4d.                 |

He comes to the conclusion: "The raising of the flash point is not equivalent to raising its price." On the occasion of this discussion, Carter Bell says, "As scientific men they could say without fear of being controverted that in our climate oil of less than 100 degrees F. flash was dangerous, and as practical men they might state as confidently that to raise the flash point was quite practicable without adding much to the price." Then further, Powell: "The raising of the flash point will not greatly increase the cost, if at all." And Mr. Young, who belongs to the Scottish oil industry, spoke, as I remarked above, before the Parliamentary Commission quite in the same sense. Against these facts and remarks one must take *cum grano salis* the declaration of our Bremen colleague, R. Kissling (*Zeit für angew. chemie*, 1895, 564), who is employed in Korff's Petroleum Manufactory, that, in case one should raise in future the legal Abel test to 99.5° F., "an essential increase of price of our most important means of lighting must necessarily follow, for it is entirely impossible at the present price to deliver a serviceable American petroleum which possesses this flashing point." Now, it is only a question how great this essential increase needs to be. One should certainly not take as a comparison the retail prices of the Kaiser oil, etc. For in this case one gets an entirely false representation of the retail prices of a universal oil of at least 40 per cent. (Abel test), which should be possible in the future. Only the diminution which is caused by the removal of about 7 per cent. naphtha (and perhaps of a small part of the heavier oils) needs to cause an increase of price corresponding with it. But we must consider that Europe, as far as prices are concerned,

depends already pretty much on the *bonne-volonté* of the Standard Oil Trust.

Finally I come to the question of a possible exhaustion of the petroleum wells of America, which also has been mentioned as an argument against a raising of the test. People assert the petroleum industry could not stand this raising; they have even maintained that this would already be the case were the test raised from 21° to 32°. As it is known, the production of the North American oil district is decreasing. The depth of the borings becomes always greater, and the stock in the tanks is, for instance, at the present moment very much smaller than last year. The American manufacturers themselves buy crude oil from Baku, and, as it seems, also in Galicia. One can with perfect right assert against these remarks that in no case do they necessitate the use of the volatile parts as burning oil; a great many States of North America give in this respect an example to Europe. In case the "old districts" look towards the relatively soon exhaustion, the 6 to 8 per cent. of naphtha becoming illegal will delay the threatening fate only for a comparatively short time. But the time for a perfect stoppage of the American wells is certainly very far off yet; in Baku new wells are still being opened; in Galicia a short time ago a well was discovered which does not fall short of the wealth of the well-known great wells in Baku. Polakowsky, in a report which appeared a short time ago (*Apoth. Ztg.*, 1895, 394), asserts about the paraffin wells in Peru that they are greater and richer than those in Pennsylvania. And Brannt, in his great monograph, which he worked out with the help of the well-known works of Veith and Hoefer, says (page 578)—"Petroleum possesses the advantages of an almost inexhaustible supply." I therefore think that we do not need to be anxious in this respect.

1. The number of accidents caused by petroleum requires pressingly an interference by the States.

2. The danger which can be caused by petroleum is practically completely done away with by raising the legal flash point to at least 104.0° F. (Abel).

3. The introduction of the existing legal flash point in most countries of Europe must be considered an error. It has not sufficiently protected the consumers; on the other hand, it has increased the power of the Standard Oil Trust, and thus has helped the origination of a world monopoly.

4. The advocates of a law for safety lamps turned the flash point question upside down, and argue, as if it would stand, thus: given a certain dangerous oil, asked the lamps and cooking apparatus which suit it.

5. A raising of the flash point is to be preferred to a "lamp law," because (a) it can be much quicker introduced without changing the existing lamps and cooking apparatus; (b) because it can be carried out much easier—a lamp law can either not be carried out at all or only insufficiently; (c) because it is much more definite, since not all safety lamps are safe and remain safe; (d) because the danger in storing oil is greatly decreased; (e) because it is quite unnecessary to protect the manufacturers by such a low standard as at present.

6. The loss in capital which Europe suffers by the many petroleum fires, and which to the greatest part come from the 5 to 8 per cent. of naphtha present in the petroleum, certainly greatly excels the gain which the manufacturers get from these 5 to 8 per cent.

7. This yearly loss of capital is, most probably, likewise considerably greater than that which will result from the difference of price between oil of 104.0° F. and of 71.6° F. to 75.2° F. At any rate this difference of price is inconsiderable if one compares it with the raising of price which occurs every now and then arbitrarily.

8. An international interference in this question, and an international fixing of the flash point to a minimum of 134.0° F. (Abel test) is highly desirable.

(To be continued.)



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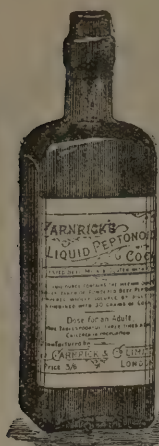
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## Food and Sanitation.

SATURDAY, SEPTEMBER 5TH, 1896.

### OUGHT CHILD MURDER TO BE STOPPED?

THIS important question is at last beginning to attract a little attention in the daily papers. In its issue of September 1st, the *Evening Standard* says:—

"In a case of adulteration tried recently, it was stated by an analyst that he had found no less than 30 grains of boracic acid to a pint of milk, and Dr. Stevenson, who was a witness, said that more than ten grains of borax a day

would be dangerous to a child, by retarding digestion, affecting the heart, and causing skin eruptions. As he gave 0.1 per cent. of the acid as the equivalent of 0.15 of borax, it is to be presumed that the adulterated milk contained acid equal to 45 grains of borax, so that if a child had a pint of such milk per day, it would consume four and a-half times the quantity which, in Dr. Stevenson's opinion, can be taken without absolute danger. The case was the first of its kind ever tried before the Court which heard it, and yet, in all probability, the dairyman and all his competitors in the district had been using antiseptics daily for years, at least, in warm weather. It is intolerable that men entirely ignorant of the strength of drugs and their effects should be allowed the uncontrolled use of them in food sold to the public."

Realising the grave importance of this question, as it affects our dairy-farming and public health, it seems incredible that so little regard is paid to it by the press. We believe it is because its grim significance is too little understood. We put outside of the argument for the present the fact that Denmark, Germany, France, Holland, and other countries could not compete against English dairy-farmers without surreptitiously drugging their butter, because some half-clever journalistic word-waster would be sure to cry, "Ah! Protection in disguise." Having Protection on the brain, as so many of them have, it is curious they know so little about its application to themselves and their homes. Not a few writers in newspapers have children, and wonder why their infants are perpetually squalling or ill. They say "our wives give the babes the best of foods," but on enquiry it is frequently found the infants are fed on Ridge's, Mellin's, or some such much-advertised infant's food. Every one of this class of foods requires to be made up with milk, and, entirely unsuspected by the father and mother, the infant is being daily drugged with boracic and other preservatives put into the milk by the amateur druggist, the milkman. As Dr. Thos. Stevenson said, digestion, is retarded, the heart is affected, and skin eruptions take place. The seeds of lifelong weakness are sown, and our terrible infant death rate is explained. Surely this question is as important as those momentous ones: "Ought women to propose?" "Ought husbands and wives to take their holidays together?" and the like, which now fill columns of our daily papers. "Ought infants' foods to be abolished, or surreptitious drugging by milkmen and others to be prohibited?" would no doubt result in discussion of some public benefit. We give the suggestion gratis to the daily press.

### ON THE VALUE OF BEING A J.P.

WE are not sure if it was at Smethwick, West Bromwich, or Birmingham, that once upon a time a stranger passed through the village, town, or city, and, as he looked particularly inoffensive, he was hospitably entertained by an appreciative crowd to a thwack with half a brick. He sought out the dispenser of the



Enjoyed by Young and Old.

# BIRD'S CUSTARD POWDER

Provides not only delicious Custard, but an endless variety of delightful, dainty dishes.

**NO EGGS! NO TROUBLE! NO RISK!**

abbreviated brick, and grappled with him, whereupon a ring was made. Of course, everybody could not see, and the excitement became intense. From those on the outskirts of the crowd came frenzied shouts, "Who's down now?"

The inner circle answered, "Stranger."

Chorus: "Smash his mouth with a brick."

Later: "Who's down now?"

The inner circle answered, "Your Tom."

Chorus: "Help the poor fellow up."

There is a journal called *The Midland Sun*, printed and published by the proprietors at their offices, John Bright-street, Birmingham, and having branches at West Bromwich, Oldbury, Wednesday, and Dudley.

Glancing through its issue of August 29 we came across the following items of news.

The first refers to a magistrate, and states that Mr. Martin Dunn (60), one of the West Bromwich Justices of the Peace, was summoned under the Food and Drugs Act, on August 24, charged with selling milk 22 per cent. deficient of its natural fat, on Sunday morning, July 19.—Mr. A. Caddick, Town Clerk, prosecuted. Henry Turner, assistant inspector under the Act, stated that on the date in question he met a woman named Lizzie Pepper, a servant in the employ of Mr. Dunn, selling milk near to the police-station. He purchased half-a-pint. George Wm. Davis, inspector, produced the analyst's report, which showed that the sample was 22 per cent. deficient of its natural fat.—Mr. Dunn explained that he had eight cows, and had a proper man to attend to them and feed them. After the cow delivered the milk, it was carried into a verandah and sifted. It was then sent out for sale. The milk as a rule was never interfered with except when the cream was extracted, and then it was sold at 1d. per quart. If the milk was poor, he could only attribute it to the dryness of the weather. The Stipendiary said it might be that the defendant's servants tampered with the milk, and he had no other alternative but to fine him 20s. and costs, in all £3 os. 6d.

The *Midland News* expresses itself thusly upon the beak's 22 per cent. abstracted fat:—

A rather peculiar case was tried before Mr. N. C. A. Neville at the West Bromwich Police-court, on Monday last. I

refer to the charge preferred against Mr. Dunn, one of the Borough Justices, for selling milk deficient in natural fat. From the evidence of Mr. Dunn it would seem that the milk was 'poor' not because it had been either adulterated or skimmed, but, in his opinion, because of the dry weather. The evidence of the defendant was candid, and he actually expressed approval that the proceedings had been instituted if the milk were deficient in animal fat as stated. At the same time he declared that the animals were supplied with good hay and other food of the best quality, and that the milk was not touched by anyone except the man in charge of the cows, and nothing was abstracted from it. The Stipendiary, in inflicting a fine, which, with costs, amounted to £3 os. 6d., said that 'the people who purchased the milk from defendant were entitled to be supplied with milk of proper quality.' This is all very well, but if the facts were as stated by the defendant, and I do not doubt them—then this case opens up a curious question or two. If cows, owing to dry weather or any other cause, yield lacteal fluid containing less than the average quality of natural fat, what is to be done with it. Clearly it cannot be sold, unless the owner is prepared to face a series of prosecutions. Then, again, does this case really come under the Adulteration Acts? If so, who adulterated the milk? Personally, I give it up."

The same issue of our contemporary contains the following:—

"Thomas Ellmore, grocer, of New-street, was charged under the Food and Drugs Act with having exposed for sale three pieces of margarine without being duly labelled.—Inspector Davies stated that on Saturday, 15th, he visited the defendant's shop and took three samples, which were not labelled. Defendant at first refused to supply him, stating that it was not butter, but margarine. For the defence, Mr. Clark urged that the margarine had only just come in, and the defendant had only just placed it on the slabs, when he was called into the back to his wife, who was ill. When he got back into the shop the inspector was there, and although he tried to explain the circumstances to Mr. Davies, he would not hear him.—Defendant was fined £5 and costs in each case, in all £18 13s. 6d."

Thomas Ellmore is not a J.P., whose Sunday milk had 22 per cent. less fat than it ought to have had, so the *Midland Sun* goes for him thusly:—

"Little sympathy will be extended to the grocer Ellmore who was so heavily fined at West Bromwich by the Stipendiary on Monday last. After a patient hearing, in which all the circumstances of the case were fully gone into, Mr. Neville imposed a fine which, with costs, amounted to £18. The charge was that he did in the course of his business expose margarine for sale without its being properly labelled. When the inspector asked to be served with half-a-pound of the article, the defendant at first declined to sell, but ultimately supplied the quantity asked for. The fact that a previous conviction was recorded against the tradesman for a similar offence doubtless operated with the Stipendiary in assessing the amount of the fine. A few cases of this kind should have a salutary effect on retail traders, and lead them to see that their 'butter mixtures' are duly labelled. Whether they intend to defraud the public or not is immaterial. The law says that anything which is not pure butter shall be marked 'margarine,' and if a person is fined for neglecting this instruction, he has no one to blame but himself."

A few days ago a superintendent of police at Aston made some very strong remarks anent Birmingham journalists, saying that men from every paper at one time or another had been in his custody, and had asked him for favours for themselves or their relatives. We hope the superintendent's remarks were not true, but in any case these object lessons show the Press up badly. Milk is the main food of infants, and the offence of depriving milk of 22 per cent. of its fat is a far graver one than is the exposure for sale of unlabelled margarine. Is there any cause for wonder that all thinking people entertain so little respect for the average newspaper, when it shows so glaringly as this how little it respects itself! The same issue of the journal in question contains a plentiful



supply of quacks' advertisements, including the usual ones for "ladies married and single" and "for females only," "guaranteed to remove all obstructions from whatever cause arising," all of which may sufficiently explain why our Press is so much respected. We take leave to tell the *Midland Sun*, our religious newspapers, and the bulk of the Press of the United Kingdom, that "exposure" of this class of abortion-procuring advertisements in a daily paper is a far graver offence against the public well-being than all the unlabelling of margarine that has been done since the Act was passed, and in this opinion we believe every healthy-minded person will agree with us.

THE INCOMPETENT GOVERNMENT DEPARTMENT  
DECLARE A SAMPLE TO BE BUTTER. — SIR  
CHARLES A. CAMERON AND MR. OTTO HEHNER  
SAY IT CONTAINS 70 PER CENT. OF MARGARINE.

IF the samples in the following case were not mixed Somerset House was, but that fogged department of Government incapables has been mixed for so long that one mixing more or less to its credit really doesn't matter, as it is sure to soon meet with a well-merited happy dispatch. It has been just condemned by a Select Committee of the House of Commons as incompetent. However, it is like the fly in the amber, there, and like unto that fly it is a curiosity even if of no use. It, however, like a Lord Mayor's Show, or the ridiculous periodical search under our Houses of Parliament for Guy Fawkes, impresses the ignorant, and because it is a Government Department those who don't know it look upon it with more or less unmerited respect, and magistrates somehow pay it some attention. We suppose they think they ought to do so until it is swept into the limbo of unwept, unhonoured and unsung absurdities. Sir Charles A. Cameron experiences the Nemesis of fate. Once when we wished to propose a drastic resolution against Somerset House, "and other public nuisances," at a meeting, Sir Charles Cameron, presiding, had a sudden attack of deafness, and the public were deprived of a discussion upon the question "Ought Somerset House to exist?" *Experientia docet*, and the following case shows that it ought not, or that Professor Tichborne and Somerset House get different samples from those supplied to Sir Charles Cameron and Mr. Hehner.

On August 25, in the Northern Divisional Police-court, Dublin, before Mr. Key, the adjourned case of the Pembroke Commissioners against Messrs. Nicholas and Simon Molloy, trading as Molloy Brothers, at 13, Haddington-road, came on for hearing. It was a prosecution under the Margarine Act for having, on the 30th of May last, exposed for sale and sold a parcel of margarine as butter. The case came on for hearing on the 3rd of June, and was adjourned to the 17th of June, when, on the application of the defendants, the stuff was sent to Somerset House for analysis, Sir Charles Cameron, the analyst for the Commissioners, having given a certificate that the article contained 75 per cent. of foreign fats, and was not butter, but margarine.—Mr. Gerald Byrne, solicitor, appeared for the Pembroke Commissioners; Mr. John Ennis, solicitor, appeared for the defendants; and Mr. Henry Hunt (instructed by Mr. Rice) appeared for Sir

Charles Cameron.—Mr. Ennis said this case was on before his worship in June, when a certificate of Sir Charles Cameron was produced to the effect that the article sold by the defendants as butter was in reality margarine. They asked to have the stuff sent to Somerset House, and he understood there was a certificate now in court adverse to the certificate of Sir Charles Cameron. His client originally had taken the precaution of submitting a sample to Professor Tichborne, one of the best known analysts in Dublin, and Dr. Tichborne had given them a certificate that the matter sold was pure butter. The certificate of Sir Charles Cameron that the article was composed of foreign fats rather startled them, having regard to the fact that his clients never sold margarine, and accordingly they asked to have the sample sent on to the court of appeal in such matters, Somerset House, and the inspector would now produce the certificate of the analysts in Somerset House.—Inspector Kelly, who is employed by the Pembroke Commissioners, then produced the certificate of the authorities of Somerset House, who certified that the sample submitted to them, having been analysed, was, in their opinion, genuine butter.—Mr. Ennis: And Sir Charles Cameron certified that it contained 75 per cent. of fats.—Mr. Hunt said he appeared on behalf of Sir Charles Cameron to make an explanation.—Mr. Ennis said Mr. Byrne appeared for the prosecution, and he strongly objected to any person appearing in the case for a witness.—Mr. Keys: I don't think I can hear you, Mr. Hunt.—Mr. Hunt: In the interests of justice I ask you to hear me.—Mr. Ennis: In the interests of justice I will ask you not to hear counsel for witness. He has no *locus standi* here.—Mr. Hunt again appealed to his worship to hear him, but Mr. Keys ruled that counsel for a witness could not be heard.—Mr. Ennis said that if the defendants had not insisted on the sample being sent on to Somerset House his worship would have inflicted a heavy fine. Sir Charles Cameron's certificate had now turned out to be utterly erroneous, and it was now his duty on behalf of respectable traders whose names had been paraded in the newspapers as selling stuff which had never been admitted to their house to give them substantial costs against the prosecutors.—Sir Charles Cameron: I will show that my certificate is correct.—Mr. Ennis: Two learned gentlemen have shown that it is pure butter.—Sir Charles Cameron: I have not been examined in the case, and I think I ought to be allowed to make an explanation. I want to show, and I will prove it on my oath, that the sample I got was composed principally of margarine. I don't want to say that the other analyses are not perfectly correct, but I want, as a public officer, to show that my certificate is correct, and I have confirmatory evidence here from Mr. Otto Hehner, the public analyst of Nottinghamshire, who is the highest authority on the subject.—Mr. Ennis: Well, I have the certificate of Professor Tichborne here that it was pure butter.—Sir Charles Cameron: I don't dispute the certificate of my friend, Dr. Tichborne.—Mr. Ennis: Well, two independent analysts were wrong and you were right.—Sir Charles Cameron: I can prove that No. 3 was not pure butter. Mr. Byrne, for the prosecutors, said that a mistake had arisen somewhere, but of course the commissioners were bound by the analysis made at Somerset House. However, he submitted that the commissioners were not liable to costs beyond the 10s. 6d. paid to Somerset House, which was usually paid by the party found to be wrong.—Mr. Ennis said Mr. Byrne had himself got costs against the Corporation in a similar case. He thought the defendants, who were put to much cost in the matter, ought, in fair play, to get their expenses when it was found that Sir Charles Cameron was wrong.—Sir Charles Cameron: I am not wrong. I think, in fair play, a scientific man having given a certificate is entitled to an explanation.—Mr. Key said he could not constitute himself a Court of Appeal against his own decision, and he was bound to follow the certificate of Somerset House.—Sir Charles Cameron: I want to be sworn to show that my certificate was right, and I have the certificate of the highest authority, Mr. Otto Hehner, that I am right, and he examined the same sample.—Mr. Keys: Then the officer must have deceived you grossly.—Mr. Ennis remarked that it was very fortunate they had such a court of appeal as Somerset House.—Sir Charles Cameron: I don't say that Somerset House is wrong, but I say that I am right, and I have a certificate here from Mr. Otto Hehner to the effect that the sample contained 70 per cent. of margarine.—Mr. Byrne: Somerset House must have got the good portion and Sir Charles the bad.—Mr. Keys: It is quite impossible that Sir Charles could have made such a mistake—utterly impossible.—Mr. Hunt: There must have been some mistake in mixing up the samples.—Mr. Ennis said it was very awkward if such a mistake as mixing up samples could have occurred in these



cases.—Sir Charles Cameron said he never had a clearer case of margarine before him. This was a very serious matter, affecting him, and he would ask to be examined.—Mr. Keys: I am quite sure a mistake must have been made. Sir Charles Cameron may have got a different bit from Professor Tichborne. I will dismiss the case, with 10s. 6d. costs of analysis by Somerset House; but I don't think I can give any further costs.

It might strike some people that Somerset House, having been condemned by the House of Commons Select Committee as unfit for its functions, thinks it policy to issue certificates which will lead to questions being raised as to the accuracy of public analysts' certificates in a number of cases, and that by bringing such instances forward it may preserve its position. That may be or may not be its game, but it is too late and too thin. So far as it is concerned its "Mene, mene, tekkel" was written in the first number of this journal, and it ought to have been written twenty years ago.

#### THE AMERICAN OIL GANG AND GERMANY.

WHEN the Standard Oil gang made up its mind to buy, bribe, or browbeat Germany and its scientific men, and to treat its Emperor with contempt it took on what was regarded as a large order, but it seems to have nearly succeeded.

Some time ago it was announced that the German Government was carefully considering the question of regulating the trade in petroleum, or, in other words, of finding means to prevent the American corporation known as the Standard Oil Company from acquiring complete control of the German market, says the *Chemical Trade Journal*. Rather more than two years ago an attempt was made by the Standard Oil Company to conclude a contract with the syndicate of Russian petroleum producers with the view of securing immunity from Russian competition in the market of Western Europe. According to the proposed arrangement, the Russian syndicate would have supplied petroleum to Eastern Europe, Asia, Australasia, and the East Coast of Africa; while the Standard Oil Company would have had the exclusive control of Western Europe—Great Britain, Germany, Austria-Hungary, Switzerland, France, Italy, Spain, Portugal, Scandinavia, Holland, and Belgium. Before accepting the contract, however, the Russian syndicate stipulated that the American company must possess a complete monopoly of the oil trade of Western Europe, that is to say, must buy up, crush, or otherwise destroy all competition. In all the above-mentioned countries except Germany, the efforts of the Standard Oil Company seem to have been attended with success, and in Germany it has waged a bitter and unscrupulous war of prices for two years past against all independent merchants. The final obstacle to the partition of the world is now stated to have been overcome, for the American monopolists have succeeded in destroying the greater part of the independent German opposition. The Imperial Government is

understood to be seeking for some means of combating the company, for the prospect of seeing the price of an important article of trade dictated by an American combination cannot be welcome. It is possible that the importation of Galician petroleum will be facilitated, and an attempt made to impose an almost prohibitive duty upon the American product.

We shall be curious to see if the Standard Oil gang's boast that it has the House of Commons Committee under its thumb, and can compel the Committee to report in its favour, will be justified by the result. Even its vast revenues and its utter unscrupulousness could not, we imagine, lead a body of English, Irish, and Scotch gentlemen to connive at shameful corruption. But Rockefeller, like Cecil Rhodes, boasts that every man has his price, and he thoroughly believes our M.P.'s have theirs.

#### FETE CATERING METHODS.

A CASE tried at Brierley Hill, on Monday, raised successfully a question we have often written upon, and which our level-headed contemporary, *The Referee*, has tried hard at times to reform. The catering of exhibitions, theatres, music-halls, fêtes, cricket and football matches, race meetings, etc., is, with rare exceptions, as disgraceful as it could possibly be. The prices are of the highest, whilst the quantity is of the smallest and the quality of the worst. There are London theatres where as much as ninepence is charged for a "nip" of whisky which is usually nearer 40 under proof than 25, but the vendors are never troubled. The following case is an excellent example, which will, we hope, be followed by many Food and Drugs Act inspectors. The racing, football, etc., refreshment caterers need a little looking after.

At Brierley Hill Police Court, on August 31, Walter Wm. Walton, landlord of the Turk's Head, Wordsley, was summoned for selling gin which was not of the nature and quality of the article demanded, and he was further summoned for adding water to the gin beyond the 6 per cent. allowed by law.—Mr. Van Tromp (inspector under the Food and Drugs Act for Staffordshire) prosecuted, and Mr. Herbert Collis (Stourbridge) defended.—William Grassam, assistant to Mr. Van Tromp, stated that he visited a booth kept by the defendant on the Corbett Hospital Grounds on the occasion of the fête and demonstration on Bank Holiday. He called a waiter, and asked for a pint of gin. The waiter poured the gin from a quart bottle into a pint bottle he had, and for which he paid 2s. He notified that he wanted it for the purposes of analysis, and divided it into two parts.—Defendant was further charged with selling the gin not in an imperial measure, and that he had in his possession a number of unstamped measures.—Mr. Van Tromp said there was not a single stamped measure on the ground that day. Mr. Van Tromp produced the analyst's certificate showing that the sample of gin submitted had been adulterated more than 6 per cent. above the statutory limit, which was 35 under proof.—Mr. Collis, for the defence, said there were something like 15,000 persons on the grounds, and as the general thing was to ask for three pennyworth of spirits there was no necessity for a measure at all. Measures that were stamped cost half as much again as unstamped measures, and as a great many cups and jugs were either broken or stolen, the magistrates could understand what the cost meant to the caterer. It was the custom of that district and all over the country to use, for that reason, unstamped measures. With regard to the quality



of the gin, the defendant had it reduced for some fêtes at Oldswinford, and it was not all consumed there. It was placed in stone jars, and used from time to time, the uncorking being the means of reducing its strength. He had had the spirit analysed, and the analysis showed it to be 38.9 under proof, and there was 2 per cent. more allowed the seller.—Mr. Van Tromp: That is under the Licensing Acts, not under the Food and Drugs Acts.—Mr. Collis said it was clear the defendant did not know the action the atmosphere had on spirits, and particularly on gin.—Defendant was called and bore out his counsel's statement.—Mr. Moul, engaged by the North Worcestershire Breweries Company, stated that the sample produced was handed to him and he tested it with the hydrometer in the usual way. The hydrometer was tested by the supervisor at Birmingham a month ago, and he had no reason to think it was incorrect now. He found it 38.9 under proof, or 2-10ths below the figures given on the County Analyst's certificate. Publicans were allowed an extra 2 per cent.—1 per cent. each way. He had heard how the defendant reduced the gin and how he kept it afterwards. If he had a continual use for it and with a bad cork, it would reduce the gin about one degree a month. There was greater likelihood of gin decreasing than whisky or any other spirit.—The magistrates retired for consultation, and found all the cases proved. Defendant was fined 40s. and costs in each case, the total fines and costs amounting to £11 4s. 6d.

HENRY IVENS, of the Holly Bush Inn, Amblecote, was summoned for supplying a pint of ale in an unstamped measure.—Mr. T. Toy, assistant-inspector, said he went to the public-house and found a number of persons drinking in a wooden building adjoining the house. He called for a pint of ale, and it was supplied him in an unstamped measure. Altogether he found 26 pints and five quarts in the wooden erection, and in the house he found the majority of the measures unstamped.—Defendant said he had not enough stamped measures and he hired the others, and there was not time to stamp them.—Defendant was fined 40s. and costs.

#### BORIC ACID.

M. CATRIN, says the *British Medical Journal*, has observed an instance of marked disturbance resulting from poisoning subsequent to injections of boric acid. M. Catrin experimented on guinea-pigs with boric acid; the animals died more or less quickly according to the quantity administered. He now abstains from prescribing boric acid injections stronger than 40 grammes to a litre of water. M. Marfan has treated tuberculosis with doses of boric acid, as recommended by Dr. Grancher, and has frequently been obliged to stop the treatment owing to the serious toxic effects of the drug. Some practitioners have treated epilepsy with borate of sodium, and were obliged to abandon its use for the same reason.

It may interest some to know that scarcely an ounce of American canned meat escapes drugging. The *National Provisioner*, in a recent issue, says:—

There is altogether too much borax used in packing—two-thirds of that used in many instances being ample. As we have often and often repeated, wipe the meats as dry as possible before passing through borax box, if dry salt, and if sweet pickled drain forty-eight hours, skin up, and afterwards wipe well. A scraper on the skin side is preferable to cloths every time. Borax is worth approximately 6c. per lb., hence the necessity of taking cognisance of the use and abuse thereof. One and one-half pounds per 100 lbs. of meat is amply sufficient. It is not necessary to sprinkle a handful in the bottom of the box and another on the top—simply a waste. Speaking about borax, we may add that the finest powdered is the best in every respect, and the fresher ground the better, also, as borax has a tendency to absorb moisture and thus become caked, consequently causing some trouble and expense to repowder. Borax should be stored in a dry place, that is, a dry atmosphere—not heated, however—so as to keep it as near as possible in the same condition as when passed through the mill.

#### FOR CURING AND STORING TONGUES.

After they have been hung in the chill room twenty-four hours they are ready to pack in barrels or tierces at 210 lbs. and 315 lbs. respectively, and not rubbed in salt or any other mixture, such being added afterwards. The idea of packing "dry" is to prevent their sticking together, and thus retarding the action of the brine on such parts. To each 100 lb. of tongues use 4 ozs. of saltpetre, 8 ozs. of sugar, 6 ozs. of any good preservative, and fill the package with 70° pickle, made up of Ashton salt, which probably imparts a finer flavour than any other known salt. Be sure the packages are tight and full, and store at a temperature of 40° to 42° F., and tongues will be ready to smoke in twenty-five days.

#### CURING BEEF HAMS AND MEATS FOR CANNING.

Prior to packing (where beef extract is made) such meats may be "leached" for from twelve to fourteen hours in cold water (using ice if necessary); this will not only furnish material for the beef extract department, but will improve the beef and insure cure. This "leach water" yields a surprising percentage of finished extract, which article, by the way, is now in greater demand than ever. The canning meats are cut into small pieces and placed in vats having a perforated false bottom four inches deep, with two and one-half inch plug hole there and through bottom, so that the water may be run to the receiving vat, from thence to be pumped to extract department. The meats should be agitated frequently while "leaching," and may be subjected to slight pressure while draining, prior to being packed in barrels of 200 lbs. each, or thereabouts, using to each barrel 12 ozs. saltpetre, 2 lbs. sugar, and 12 ozs. boric acid, after which fill with 70° pickle, which will turn out beef hams in fifty days for smoke and canning meats in ten days ready for cooking, the soups from which department, as well as pickles from cellar, may also be pumped to extract department.

#### MR. N. JOHNSTOUN COOMBES ON ADULTERATION, ETC.

In the issue of the *Western Morning News* of August 21st, the following letter appears:—

"SIR,—As one who has had fifteen years' practical experience as a public analyst, perhaps you will allow me to make a few remarks upon the article which appears in your issue of this date upon the above subject. It cannot, I think, be for one moment contended that the present Act, where it has been properly enforced, has not done much to check adulteration, and if equally enforced throughout the country would do much more good. But such a result, however desirable, will never be attained when the working or enforcing of the Act remains under so many differently constituted authorities. The present Sale of Food and Drugs Act ought to be entirely replaced by a new Act, the public analyst of to-day abolished, and his place taken by a Government or State analyst, who would be under the control of the Minister of Agriculture, the Act giving the Minister of Agriculture full powers to analyse the food, drinks, and drugs of the country, and from time to time to bring or declare any article which is not included under the terms food, drink, or drug under the operations of the Act. The powers conferred upon local authorities to appoint analysts ought to have worked well, but unfortunately some of them were made in a most careless fashion, experienced candidates being rejected for young and inexperienced ones, simply on account of local patronage; and I know of one case in particular where a German illegally usurped the functions of a public analyst for a number of years,



until one fine day he was pounced upon and compelled either to relinquish the false position he held—a position even worse than that of a sham priest—or become a British subject, the latter of which he did, and was then afterwards legally appointed to the post. The recommendations of Mr. T. W. Russell's committee to form a Standing Departmental Committee, to be composed of the principal officers of the Government Laboratory, nominees of the Local Government Board and Board of Agriculture, one or more analysts of repute, representatives of the Medical Council, the Institute of Chemistry, the Pharmaceutical Society—scientists whose presence would lend weight to its discussions—in my opinion is a thoroughly bad one, and for this reason, that it will be found in practice that these representatives are all men holding appointments under the Act or all belonging to the same societies; and I am led to believe that that is the very reason the Institute of Chemistry has been mentioned and the Society of Public Analysts left out, the Institute of Chemistry being nothing more nor less than an incorporated company, or examining body, who cover themselves under an antiphrastical misnomer, who have not even the authority or power to grant a diploma on the subjects in which they examine. Too high and rigid a standard has been fixed by some analysts, and no sufficient allowances have been made for natural variations in milk applies only to the 'I am' public analyst, who considers himself of more importance than either the consumer or retailer. The more convictions he can obtain, the more important will he appear before those who appointed him. That in several instances I have known to be actually the case, the eagerness of the analyst to obtain convictions immediately brings himself into collision with the analysts of Somerset House, who have to take the broad view of the question, and not only study the pocket of the consumer, but also of that of the retailer and the general trade of the country at large.

"N. JOHNSTOUN COOMBES,

"Late Public Analyst for the boroughs of King's Lynn, Dunstable, Dartmouth, Great Torrington, and St. Ives (Cornwall)."

### A NEW ADULTERANT OF MILK.

A NEW danger to milk drinkers is pointed out in the *Revue Scientifique* (Lit. Dig.), as follows:—

"M. G. Denigès, of Bordeaux, having obtained possession of three samples of yellow powder used by certain milkmen at Bordeaux to preserve their milk, made a chemical analysis of it. This analysis showed that two of the powders were composed wholly of neutral chromate of potash, that the third was a mixture of one part of bichromate of potash and two parts of neutral chromate, and that the suspected milk had been adulterated with this last substance in the proportion of 0.30 gram to the litre (5 grains to the quart).

"The alkaline chromates are, in fact, powerful antiseptics, capable, even in small quantities, of retarding lactic fermentation very noticeably, if not of stopping it completely. But because of the pernicious action of these salts on the organism they ought to be completely excluded from food substances, and particularly from milk, of which many young children drink relatively large quantities. These chromate powders are sold in packages of 2 grams (30 grains), each of which should suffice to preserve about 50 quarts of milk, which would correspond to 0.04 gram (0.6 grain) of antiseptic to the quart, evidently a minimum proportion. But it is likely that the milkmen will be induced to augment this quantity, either because it is insufficient to preserve the milk during the high temperatures of summer, or in order to restore the colour of the liquid, due normally

to hemolutein, a yellow pigment, when it has been lessened by skimming the cream, adding water, or by inferiority of quality, and thus to cause a mediocre product to pass for milk of greater value. Because of this double advantage that milkmen can get from the use of chromates, it is to be feared that this practice will grow in the milk industry if the fraud is not watched for attentively. A simple process for detecting it is therefore much to be desired."

### HOW BUYERS OF OATMEAL ARE VICTIMISED.

WHAT appears to have been a peculiarly impudent fraud was recently perpetrated upon Charles Owen Dawley, who was summoned last week for selling two half-pounds of oatmeal containing other ingredients than those specified.—Sergeant Hamlet was called to prove the purchase, and said that it had been submitted for analysis to the public analyst, and it was found to contain 10 per cent. of other matters, believed to be either wheat, flour, or barley-meal.—Mr. Carrane, subject to an explanation, pleaded guilty, and said Mr. Owen, who is a most respectable man, bought this oatmeal for 32s. a sack, which was the very best price at that time, and he had no knowledge that it was other than the genuine article.—Defendant gave evidence, and said he had a branch establishment at Dawley, which was managed by his son-in-law. To his knowledge the oatmeal had not been tampered with in any way, and when he bought this oatmeal he could have purchased some at 21s. per sack, but he always bought the best he could.—Mr. Machin (the son-in-law) also swore that he had not interfered with the oatmeal personally.—The case was dismissed on payment of costs.

Mr. Owen would have done well to have made public from whom he purchased it, that other traders might be put upon their guard.

### THE SUBSTITUTION EVIL.

WE have recently had some eye-openers as to what Germans can do in the way of fraud in manufactured articles, and there is no doubt that throughout our dependencies the most arrant impostures are practised with impunity, and to the direct injury of the good repute of English firms. Mr. W. Charles Lewis, writing from Naigam-road, Dadar, to the *Times of India*, of August 6, says:—

On or about the 10th of last month, I had occasion to bring to the notice of the Superintendent in charge of the Arthur Crawford Markets that the purveyor of a provision stall had sold to my wife with other articles, amounting to about Rs. 15, "two bottles of vinegar" purporting to be that of the genuine English-make of Messrs. Crosse and Blackwell. These were given her with the usual "trade marks" or "labels" of Crosse and Blackwell, and were also neatly covered over with the usual outside "paper wrappers," also bearing the name of Crosse and Blackwell. Everything indicating or suggesting that the bottles were genuine, they were placed by the side of the other articles in the coolie's basket and conveyed home, only to be discovered a few days after, when required for use, that the bottles, though originally those of Messrs. Crosse and Blackwell's, contained spurious "country stuff"! There were also neat "capsules" on the bottles, but not those which bear the name of Crosse and Blackwell. With this one exception the "fraud" was well played upon the public.

On going to the purveyor before seeing the Superintendent of the Markets, he (the purveyor) tried to explain away the difficulty by saying (1) that the transaction was a mistake; (2) that his son had brought out the wrong bottles, also by mistake; and (3) that he would exchange them for the good, genuine vinegar of Messrs. Crosse and Blackwell's manufacture on the return of those supplied. These facts were reported by me to the Superintendent of the Markets, and I handed him one bottle uncorked, with



"label" and "capsule" intact. The purveyor after this followed me and my wife all over the markets and bazaars for about two hours, asking and begging of me to compromise the matter by speaking to the superintendent. He also mustered up two or three children in front of us several times, pleading that he was a *kutchra butcha wallah*, and matters would end seriously with him. I distinctly replied I could not see that I would be doing justice to the English firm, nor would I be doing justice to the public, by allowing the matter to slide so easily.

In his pleadings to be "let off" in presence of the market peons, he threw all blame on a person whose name he mentioned, who, he said, made and bottled the vile "country stuff" in the native town.

I have heard nothing on the subject from the Market Superintendent, notwithstanding he asked me to leave my name and address, which I did. It is to be hoped he has done, or is doing, something, but meanwhile I think the Bombay public should be warned of this "fraud," and trust the police will take cognisance of this case.

There are German firms of printers who supply imitated labels of almost every large English firm, and these labels have an extensive sale in our colonies. There is practically no check upon the injury thus inflicted upon the good name of English goods, and almost every firm of high repute suffers from it. This is a question worthy of the attention of Mr. Chamberlain, who, as a clever, capable business man, can appreciate its importance. It is not too much to ask that such frauds should be severely punished in our colonies—but they are not.

### ADULTERATION IN SOUTHAMPTON.

THE report of the public analyst, Mr. Arthur Angell, appointed for the county of Southampton, excepting the Isle of Wight division, upon the articles analysed by him under the Food and Drugs Act, during the second quarter, 1896, states that the total number of samples analysed during the quarter was 126, and the number of samples adulterated 12.

It is a matter of satisfaction to observe that all the samples of the following articles were found to be genuine:—Lard, foreign butter, Dutch cheese, arrow-root, dill water, and sal volatile.

With regard to the "foreign butter," too much importance must not be placed upon this evidence of freedom from adulteration, inasmuch as the mention of the name "foreign" by the purchaser at once marks him as an inspector. In conjunction with this it is a notable fact that out of 11 samples purchased as "salt butter" two were margarines.

Out of 12 samples of condensed milk, two were so poor in fat as to indicate partial skimming, and from one practically the whole of the fat had been extracted.

The absence (nearly) of spirits this quarter has somewhat reduced the total percentage of adulteration discovered.

### ANOTHER BACTERIA AND OYSTER MERCHANT.

WE were just beginning to enjoy ourselves with oysters when we met the following in the *Morning Post*:—

"SIR,—This week a sort of inspired apology and defence has been inserted in most daily papers, signed by some responsible members of the Coln and Colchester Corporations. So far as they go they have told the truth; but not the whole truth, for both Wivenhoe and Rowhedge discharge the whole of their most loathsome and evil-smelling sewage direct into the Coln. These two places, coupled with Brightlingsea, are quite sufficient to account for anything poisonous in Pyefleet, as Brightlingsea is below Pyefleet, and Wivenhoe and Rowhedge are above it.—Yours, etc.,

BACILLI."

This is, we suppose, the right way to help English industries. They are English, so the correct thing, *à la* Ernest Hart, etc., is to insinuate horrible things about them. It doesn't matter whether what you insinuate is rot of the rottenest so long as the *Daily Drivellers* quote you, and now that Li Hung Chang has gone, and there is nothing in new novels worth reading, save Harold Frederic's *Illumination*, another oyster scare may be hailed as a godsend by journalists gravelled for lack of matter. Should "Bacilli" desire to proceed farther on the evil tenor of his way, we inform him that Dr. Emmerich, of Munich, drank daily for two weeks from a half litre to a litre of sewage, and the only result it had upon him was to benefit a gastric catarrh from which he suffered. There has not yet been the new cure started of drinking raw sewage for gastric catarrh, but it is not beyond the bounds of probability that Mr. Ernest Hart, or some other active gentleman, will yet gravely propound it as a great discovery, and that Barking and Crossness should blossom into health resorts. Anyhow, if any Colne or Colchester oysters come a-walking with us we are of opinion that, typhoid or no typhoid, they will suffer the fate of the oysters who went a-walking with the walrus and the carpenter, and this is our opinion of the oyster scare.

### THE SAUSAGE MYSTERY.

WE occasionally hear of a raid upon users of diseased meat for sausage making, and of poisonings such as those in the Manchester district, but as to the sausage itself, it has been well entitled a "bag of mystery." It has been left to Mr. Peter Fyfe, chief sanitary inspector, Glasgow, whose admirable and able yearly reports we have often referred to for their real value, to endeavour to solve the mystery of the sausage. Mr. Fyfe obtained eight samples for analysis by Dr. Clark, Glasgow city analyst. Six of these were obtained from well-known makers in order to ascertain what proportions of bread and water each was introducing into this savoury article of diet. The prices varied considerably, and I give the result of this enquiry. The following were the prices per lb. :—

|              |       |       |        |       |       |
|--------------|-------|-------|--------|-------|-------|
| No. 1,       | -     | 6d.   | No. 4, | -     | 8d.   |
| No. 2,       | -     | 7d.   | No. 5, | -     | 10d.  |
| No. 3,       | -     | 8d.   | No. 6, | -     | 10d.  |
|              |       |       |        |       |       |
|              | Per   | Per   | Per    | Per   | Per   |
|              | Cent. | Cent. | Cent.  | Cent. | Cent. |
| Fat Pork ... | 30'5  | 38'5  | 28'5   | 23'0  | 47'0  |
| Lean do. ... | 36'0  | 34'5  | 59'0   | 43'0  | 42'0  |
| Bread ...    | 18'5  | 12'5  | 6'5    | 16'0  | 2'5   |
| Water ...    | 15'0  | 14'5  | 6'0    | 18'0  | 8'5   |
|              | 100'0 | 100'0 | 100'0  | 100'0 | 100'0 |

These figures will repay a little study. It is evident from them that the public can be deceived to any extent as to the proportion of nutrient animal matter they possess in their pound of pork sausages. I need hardly say the Food and Drugs Acts do not provide any protection to the public in the purchase of sausages adulterated with bread or water to any excessive extent. If nothing poisonous be introduced, the law can no more be put in force here than in the case of mixing sweetmeats of a specific name with paraffin wax.

The other two samples were of low-class beef sausages. Mr. Tatlock certified them both as being free of any admixture of horse-flesh, which was the ingredient specially looked for.

### DANGER IN PUBLIC BATHS.

AT a recent medical meeting at Riga, the infection was reported of 326 girls, from four to sixteen, traced to the use of a common bath-room, where all contracted blennorrhœa urethralis, or gonorrhœa.



## MORE TINNED FOOD POISONINGS.

THE danger of eating tinned goods was seriously illustrated on Sunday last, when a lad named George Henry Billson, aged 13 years, died at Brightside, Sheffield, having been poisoned by eating tinned salmon. The lad went to take tea at the house of Mr. William Knight, 53, Tipton-street, Attercliffe. Along with other things, he partook of some tinned salmon. The next day he was taken ill, but was able to continue going to school. His parents were at a loss to account for his illness, as he had hitherto enjoyed good health. On Wednesday night he complained of a pain in his bowels, and died at half-past four o'clock on Sunday morning, no doctor having attended him. The Knights did not escape, and three of them—John William (aged 20 years), Arthur (aged 14 years), and Ethel (aged 11 years)—are under the care of Dr. J. Smith, *locum tenens* for Dr. Morton. He expresses the opinion that all three are suffering from the effects of poisoning, caused by eating tinned salmon. These three, however, are considered to be out of danger.

## HOW TO MAKE USE OF OUR CRIMINALS.

A PLEA for the use of criminals condemned to death in the interest of science through experimentation is made by Dr. J. S. Pyle, of Canton, Ohio. He says that a human being, whom justice has condemned to suffer death, has forfeited every naturally inherited right, and indebted himself to society for the loss of one or, perhaps, more of its members and the expenses of a fair and impartial trial. This latter, justice exacts to the same extent as it does the death penalty, and, if the purport of the law is followed, the right to experiment upon capital criminals cannot be denied. Why a capital criminal should not be used in the interest of suffering humanity is hardly to be understood. Can intelligent people exhibit more sympathy to criminals of this class than to the patient sufferers dying daily from diseases that might be prevented by the knowledge gained from such experiments? Can a sentiment be respected which removes human sympathy from the suffering, law-abiding citizen to the capital criminal? Can the execution of a death sentence conducted in the same manner as a modern surgical operation be truthfully represented as more brutal and less sympathetic than hanging. The facts are that in no way would it approach the frightfulness or brutality exhibited on the gallows.

## LAGER BEER v. BITTER BEER.

THERE is a general belief that lager beer contains far less proof spirit than ordinary bitter beer. Mr. Fyfe, Chief Sanitary Inspector, Glasgow, in his annual report, says:—

I obtained four samples of beer for analysis by Dr. Clark, two being lager beer and two bitter beer (Scotch). They were all found genuine. The "lager beers" contained, respectively, 10.5 and 11.9 per cent. of proof spirit, and the "bitter beers" 8.8 and 10.8 per cent.

MEDICO.—The deceased was shot between the hyoid bone and the insertion of the sterno-cleido-mastoid muscle.

ATTORNEY.—Do I understand you to say that wounds in this Latin part of the body are generally fatal?

## IN TIME TO COME.

WHEN the women all wear bloomers, and their skirts are laid away; when their legs are no more rumours, coyly hid from light of day; when the petticoat's forgotten, with its swishing, wishing swirls, and there's less demand for cotton, I'll be sorry for the girls. I'll be sorry for the lasses who in school are at their books, at the head or foot of classes—I'll be sorry for their looks; for their ma's will make their trousers, and, good heavens! don't we know, who were boys, but now sirs, that they'll be a holy show. It is bad enough when Willie weareth pants his mother made, and it often knocks you silly just to see the youthful blade wearing pants that no man knoweth which is front or which is back; if he cometh or goeth there is quite an equal "slack." But your Susie! Oh, 'tis galling: scalding tears will downward glance when you hear the urchins calling: "Say, where did you get those pants?" You will see her youthful glowing, but by no dead certain rule can you tell if she is going or coming home from school. There'll be trouble you'll allow, sirs, there'll be anguish for the pa's, when their daughters will wear trousers that are just revamped from ma's. So I'm weeping as I'm writing, and my great tears fall like pearls, scarce I know that I'm inditing, for I'm sorry for the girls.

## SENSIBLE PHILANTHROPY.

MR. RICHARD CADBURY, a member of the well-known cocoa firm of Cadbury Brothers, has decided to build thirty-three almshouses for aged folk near the works at Bournville, Birmingham, and to endow them with the rents of a number of villa residences. Mr. Cadbury is also greatly interested in the work of the Upper Highgate-street Mission, Birmingham, and to facilitate its work in the future he has undertaken the provision of a complete suite of rooms.

## A CELLULOSE FILTER.

H. POTTERIN finds that the expensive and fragile biscuit porcelain tubes in the latest filters may, with advantage, be replaced by filtering media prepared from cellulose. Fibres of the latter are finely powdered and sifted, then suspended in water so as to form a paste which, when slowly dried, forms plates some millimetres thick. These plates are very efficacious as filters, and are so inexpensive that it is a cheaper matter to replace them with new ones than it is to clean porcelain tubes.—*Comp. rend.*, cxxiii., 263.

## THE ART OF PLAIN SPEAKING.

WE have learned from credible sources that St. von Niementowski has prepared a paper giving an account of carboxethylorthoamidoparatoluyamide, of nitrometamethylorthouramidobenzoyl, of amidometamethylorthouramidobenzoyl, of dinitrometamethylorthouramidobenzoyl, of diamidometamethylorthouramidobenzoyl, and of the diacetyl derivative of diamidometamethylorthouramidobenzoyl.

A HEROIC TREATMENT FOR DRUNKENNESS, used with gratifying results among the soldiers in his command, is reported by an army surgeon in the *American Medical-Surgical Bulletin*. Every man who reports at the hospital in a state of simple alcoholism is treated as a case of alcoholic poisoning, taken immediately to the operating room, his stomach emptied by the use of a stomach-pump, and thoroughly washed out with warm two per cent. soda solution. After this he is given a bowl of hot beef extract, with cayenne pepper, and allowed an hour's rest, after which he is perfectly able to do his duty. The treatment is energetic, but an excellent means of ridding the army post hospital of that class of periodical drunkards who regularly report for treatment and a little rest after the usual pay-day spree.



## THE FLASHING POINT OF PETROLEUM.

By DR. LOBRY DE BRUYN, AMSTERDAM.

*Chemist to the Dutch Admiralty.**(Concluded from page 419.)*

The movement for the raising of the flash point in England made headway after the appearance of the Abel-Redwood report, and in consequence of the increase of the number of human sacrifices. The merit, to have led it in the first instance, and to have awakened it among his colleagues, certainly belongs to the Scottish chemist, D. R. Steuart. By means of criticism and experiments, which have been repeatedly mentioned above, he has attacked the Abel-Redwood report, and made clear its one-sided tendency. After these attacks, this report has not been closely defended, although Spencer, before the "Research Committee," continues to refer to its contents. It is very much to be pitied that Steuart belongs to the Scottish oil industry, although it is, on the other hand, easily explained why he has taken up the treatment of the question. For, except the official chemists, there are only few in England, as well as in Germany, who, taking up an impartial standpoint, have treated the flash point question more closely; and the gentlemen of the oil industry are, in consequence of their daily experience, in the first position to be able to give an opinion. But the circumstances that Scottish chemists had especially occupied themselves with this question has given occasion to some insinuations from the author of an article in the *Times* of 24th August, 1894. The origin of the article can be guessed. The movement for raising the flash point is in it simply characterised as an egoistical interested movement for the purpose of benefiting the Scottish oil industry. Then it is mentioned that the raising of price caused by it would enable the Scottish oil to compete, because it, the article said, contains no volatile parts at all; but then the consuming public would need to pay considerably more for the oil. Now, it is simply untrue that the Scottish oil contains no volatile parts at all; according to several reports it contains about 6 per cent. of naphtha. Concerning the asserted protection of the Scottish oil industry, it is rather too much to speak about a protection of the Scottish industry in contraposition to the unheard-of protection of the Standard Oil Trust by allowing a far too low flash point, by which lives and goods of men are sacrificed. It is also for this reason untrue, because America, with an oil of about 104° 0' F. (Abel), which therefore does not contain the about 7 per cent. of naphtha, will, of course, still dictate the prices. But the matter stands quite different from what the article stated. The Scottish manufacturers, already before there was any American petroleum in Europe, did not want to bring to the market, on account of its danger, an oil with a lower flash point than 100° to 120° F. (Abel). The result has been that in Scotland, England, and in Ireland, before the import of the American petroleum, accidents were almost unknown; also to-

day accidents in Scotland are, as I remarked, very rare just because very little American petroleum is imported there, although the lamps in use are the same. That this latter oil has competed strongly with the Scottish industry, and that the state of this industry was very critical, is a fact; but with a flash point of at least 104° 0' F. the competition will remain just as well. However, the Scottish chemists were not the only ones who advocated the raising of the flash point: in the Manchester section also this was done. In a similar sense Crum Brown, the president of the Chemical Society, has expressed himself in the words—"Mere reason tells us that a substance which gives off at an ordinary summer or room temperature inflammable vapours is dangerous, and if used as a lighting material requires special care." Also formerly Attfield and Playfair have advocated an oil with an high test, and no voice has declared itself for the present low flash point except that of official experts, whose one-sided standpoint we have already characterised. The best known chemists, however, are silent. In Germany there never arose an expression of opinion among chemists about the flash point question. The works on which the determination of the official flash point is based are not easily procured. Publications have not appeared since the year 1881, as far as I know, except the works by Thörner in the year 1886, to which I have referred above: they treat the danger of explosions in lamps. Only Ferd. Fischer expresses himself shortly in the sense that he esteems a raising of the flash point to 80° 6' F. (Abel) to be necessary (*Dingl. J.*, 1881, 240, 170). However, the matter has remained as it is, and the public is inclined to think that it cannot be otherwise, and that the use of petroleum must bring with itself danger, human sacrifices, and many fires. It would be very desirable also that the German experts would busy themselves a little more closely with this question.

What a strange standpoint Europe occupies in this question! If ten or twenty missionaries are killed in China the whole Diplomatic Corps is on the move; Ultimata are sent, powerful men of war are prepared, the whole of Europe is in motion. This is all right; it is not necessary that the fellows of one's faith should be murdered. But round about us, in our very midst, the petroleum takes every year hundreds of dead, thousands of wounded, and, above that, a loss of capital of many millions; "in London every week; in Great Britain every evening, one killed," as it is reported shortly and clearly. One knows the cause of these unnecessary "petroleum murders"; it is only the 6 to 8 per cent. too volatile parts of petroleum which cause its great danger. This oil is sent to us by a powerful company, with a capital of 400 millions of marks, who endeavour to get the world's monopoly and are in every respect inconsiderate. They have managed it by means of false or semi-false representation, by incorrect stating of the questions, by giving exceptions as rules, etc., etc., to confuse the simple flash point question which was clearly formulated more than twenty years ago by Chandler; and to exercise, upon the legal flash point in several States, an influence which serves only their interests. That is the power of the dollar! And to this company, Europe, which carries out its will in the East of Asia and in the Balkan, remains submissive even now after an experience of ten or twenty years. I repeat the question, How long shall that last?

The whole flash point question is, in the first instance, an ethical one; therefore it must be demanded, without any condition, that it should not remain buried under a heap of American dollars.



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## Food and Sanitation.

SATURDAY, SEPTEMBER 12TH, 1896.

### THE AMATEUR DRUGGING OF MILK.

THIS subject is beginning to be understood to some extent by the Press. "It may be admitted," says the *Evening Standard*, "that were the pessimist views of medical scientists justified by facts, the human race would perish from the earth in the course of a few weeks, owing to the germs that infest air, water, earth, and all things visible and invisible. The human race has, however, gone on steadily increasing, from the days of Adam to the present time, and there is, as yet, no sign whatever of any diminution in the ratio of increase. We may, therefore, hope that some of the evidence given by analysts before the Food Adulteration Committee, with reference to the deadly nature of the milk supplied in large towns, is overdrawn. That antiseptics are freely used, for keeping milk in fresh condition may be readily conceded. The question,

however, is as to the amount of risk incurred by the use of such additions. A doctor gave evidence that more than ten grains of borax a day would be dangerous to a child, and yet in a recent case it was shown that each pint of milk examined contained 45 grains of borax, so that children drinking it consumed four and a-half times that quantity. There is no reason to assume that the milk in question contained a much larger amount of chemicals than that supplied by scores of other dairymen, and yet, so far as we know, there is no single case in which children have been killed by the borax in the milk. It may be admitted at once that it is a grave anomaly for farmers and dairymen to be allowed to adulterate their milk with substances that may be deleterious to health, but it is clear that such substances are, by no means, of so dangerous a nature as they are declared to be by some medical and chemical authorities."

We should like to know on what grounds the *Evening Standard* ventures the statement that these drugs are "by no means of so dangerous a nature as they are declared." For although we have sent the Sanitary Inspector abroad and appointed Medical Officers of Health throughout the land, the frightful tale of infant death is to-day but little smaller than it was in 1840-41, when, out of a total of 350,101 deaths in England and Wales, 76,328 were children under one year of age. Our statistics do not show the death rate of infants brought up at breast and of those artificially fed; but in Berlin the death certificates of children under one year must state whether the infants were brought up at the breast or upon artificial foods. In 10,000 deaths it was discovered that three-fourths, or 7,646, were artificially fed.

Minert, of Bavaria, has shown that out of 400 deaths of children from summer diarrhoea that came under his observation, 96 per cent. were nourished artificially, and, in England, Hope's investigations disclosed that only 3 per cent. of one thousand deaths were breast-fed infants.

As the *Evening Standard* admits, the practice of amateur drugging is universal, and it is a fact that milk vendors physic their customers without the customers' knowledge or consent. Scientifically, there is but little known of the effect of these drugs upon the consumer, but the investigations already made point to its being a pernicious one in the case of so delicate an organism as that of an infant of a few months old. From what is known of boracic acid, the preservative chiefly used, three and three-quarters grains per pint are requisite as a milk preservative. The maximum dose of this drug for a child three years of age is six grains. The grave danger of giving an infant, only a few days or weeks old, milk containing three and three-quarters grains per pint requires no emphasis, and, as this is continued for months, it is not difficult to realise that it must act injuriously upon the child.

Dr. Robinson (Dover) recorded, some months ago, the following dangerous boracic acid poisoning by milk:—"Of a household of seven adults five were attacked with severe colic and vomiting, lasting from two to four days, and accompanied, in the worst cases, by suppression of urine. Much prostration and irritability of the stomach persisted for some days. On the day of seizure it was found that some milk which was partaken of by the five victims had been treated with 'glacialene' as a preservative. This glacialene was found to contain boracic acid. In addition to this, boracic acid had been added to the milk, with the same object, before delivery. The milk in question, mixed with blanc-mange, was given to some fowls, and, out of nine, five died; the others showed signs of poisoning, though in a less degree. There were no other circumstances to account for the outbreak. Dr. Robinson dwelt on the necessity of precautions in prescribing this drug, and of greater restrictions in its use as a food preservative."

The *Evening Standard* appears to be under the delusion



that it is only the milkman who puts drugs, of the potency of which he knows nothing, into food; but the fact is that in addition to this amateur drugging by the milk vendor, the wine merchant, the beer seller, the butterman, bacon dealer, butcher, and everyone who supplies food for young or old, uses these drugs freely, hence we have the peptonising and pancreatising, that is to-day so rapidly extending itself, and a healthy stomach performing its functions properly and thoroughly is becoming as rare as a four-leaved shamrock. We may sanitize and sanitize and go on sanitating, but whilst we permit these murderous practices we shall see little diminution in the slaughter of the innocents. Perhaps the scribe of the *Evening Standard* may have a "little precious," and think it is certain to be all right as far as food goes because it has Mellin's, Ridge's, or some other hugely-advertised infants' food given to it, but such foods require to be made up with milk, which, as the *Evening Standard* points out, will doubtless have drugs added to whatever amount the amateur druggist, the milkman, thinks will serve his purpose. After all it would, we think, be better if the milkman and other food purveyors sold food and left drugs to the druggist.

#### DR. RUSSELL ON MEAT INSPECTION.

THE Scottish Sanitary Congress, at Dumfries, was addressed by Dr. J. B. Russell, medical officer of health, Glasgow, on Sept. 3. He thanked the association for electing him to the position of president, and expressed regret that the state of his health would not permit him to attend the sittings except during the time necessary to deliver this address. He devoted it entirely to the question of meat inspection, with a view to vindicating the policy which has been adopted by the Local Authority of Glasgow. He had come to think that Glasgow occupied in the suspicions of some gentlemen, in a small way, much the same position as Lord Salisbury does in the dreams of the statesmen of Europe. (Laughter.) They discovered Glasgow everywhere mining and countermining, adding a deeper tinge of black to the cloud of agricultural depression, ruining the trade of the meat salesman, thwarting the speculations of the butcher, invading the professional perquisites of the veterinary surgeon. Those who made these statements represented their own interests. The sanitary authority of Glasgow represented the interests of the consumer. Since 1882 it had in those interests shaped out a definite policy with respect to meat inspection. It had successfully defended and enforced it in the Law Courts at enormous cost. It had accumulated information in support of it by deputations sent over the principal markets of Great Britain and the Continent. It had incorporated it in local Acts. Glasgow was satisfied with this policy, and intended to stick to it. He was sure there would be absolute unanimity among them in accepting this proposition, that in the interests of the consumer all butcher meat, at some period between the time when the animal passed alive into the hands of the butcher and the time when the meat derived from it was distributed to the user, ought to be inspected and passed by a competent public inspector. The only time when effective inspection could be made was at the place and at the time of slaughter. The physiologist and pathologist never lose sight of the fact that the portion of meat was part of a living animal, that if the animal was diseased either constitutionally to begin with or constitutionally as a sequence of some condition which was primarily local, then every part of the animal was diseased. The physiologist and pathologist said, Show us the animal when it is alive and its whole organs and parts when it has been slaughtered and we will pronounce judgment on the wholesomeness of the whole animal. The butcher said, Allow me to kill the animal and "dress" the carcass, and then I shall draw aside the curtain and admit you to the contemplation of a work of art. (Laughter.) So thoroughly artificial was the butcher's conception of

the structure and constitution of a carcass that he would confidently submit it in detachments, tongues and sirloins, rumps and quarters, for the matter of that, chops and steaks, just as a man might submit fossils to the geologist or pebbles to the mineralogist, taking to himself credit all the while for frankness to the inspector and fair play to the consumer. He did not deprecate this process of dressing as in its intent necessarily dishonest or in its nature improper. To a certain extent it was a legitimate trade process. But it removed from the body the parts most likely to contain evidences of disease. It was sometimes of importance not merely to determine whether in general the animal had been diseased, but what precisely the disease was. Without the viscera this might be absolutely impossible. He should like to see what the professor of pathology in any of our universities would make of a human body deprived of its head and all its viscera, and placed before him without a clinical history of the case, in order to discover of what disease the person had died. Every carcass dressed in the ordinary way and then submitted to inspection was exactly in the same position; only the problem was more puzzling in the animal, because veterinary surgeons did not allow their patients to die. They might be killed before the disease, of which the viscera might show unmistakable signs, had produced marked changes in the flesh, and if the disease should happen to be one which in itself involved danger to the consumer, then any judgment which turned on the condition of the flesh alone must be to the prejudice of the consumer. Dr. Russell criticised in an adverse manner the proposal for dead meat inspection at a clearing-house, as advocated at a recent conference held in Edinburgh, quoting from the speech of the chairman of that conference words which went to show that it was a system advocated in the interest of men who "took the risk of selling meat in towns," and observing on that that there was no risk in selling sound meat. He contended that the only satisfactory method of dealing with the dead meat trade was a system of detective inspection, followed in case of detection by criminal prosecution, and gave some amusing experiences of the detective staff of Glasgow in discovering and combating the devices of the "carrion" or "salvage" butcher. The success of the system followed in Glasgow was, he urged, established by the comparative rarity of seizures now.

#### CO-OPERATION AND POISONING.

A COUPLE of years ago the spokesman of co-operation owned up to having a "special brand" of butter made for them, and we did a little calculation from their own figures, which yielded the surprising result that co-operators were paying £40,000 per year for water made to stand upright, and sold to them at butter price. As it has apparently proved to be a good thing for co-operative stores to have a "special brand" of butter, co-operation has extended its monopoly and got a "special brand" of salmon. Unfortunately for a Sheffield boy named George Henry Billson, aged 13 years, of 221, Don-road, he ate of the "special and exclusive brand" of co-operative salmon, and the coroner held an inquest upon him on September 2. The mother of the deceased said that he had some tinned salmon for his tea. He vomited several times on Thursday, and she gave him brandy and soda water to allay the sickness. On Friday and Saturday the same symptoms were apparent, and in addition to brandy and soda water she gave him castor oil both days.

Dr. I. Smith, *locum tenens* to Dr. Morton, of Brightside, gave evidence of having attended John William, Arthur, and Ethel Knight from August 23rd, all of whom had partaken of the salmon the previous day along with the deceased. He described the symptoms as being similar to those of the deceased. Most probably the effect on the three he attended had been more modified.

Mr. George Frost Thompson, manager of the



Brightside branch of the Co-operative Stores, examined the tin produced, from which the salmon had been taken, and identified it as being of the "Wheat Sheaf brand," which he said could only be obtained at the Co-operative Stores. It came from the Wholesale Co-operative Society, Manchester, about six weeks ago. Ethel Knight came to the shop on Thursday, and told him they had all been ill through eating the salmon that her mother had bought the previous Saturday. He only heard of the illness of the deceased the day after he died. He did not remember selling the tin to Mrs. Knight, but had frequently sold her tins of salmon.

The jury returned a verdict of "Death from an irritant poison, probably caused by eating tinned salmon."

#### A PROSECUTION FOR ALLEGED FRAUDULENT MANURE AT LAST.

STAFFORDSHIRE has long shown real enlightened zeal in suppressing fraud in footstuffs. In the following case it has deserved well of farmers throughout the kingdom, for it has tackled manures, and we hope the good example will be largely followed.

At Penkridge Police Court, on Sept. 7, the Fish, Bone, and Waste Produce Manure Company, 10, Rumford-place, Liverpool, were charged with four offences under the Fertilisers and Feeding Stuffs Act at the instance of the Staffordshire County Council. The first offence was for selling fertiliser manure in the month of May to Mr. Percy Brewster, of Stretton Mill, without giving the analysis in accordance with the terms of the Act; second, for not stating at least the percentage of nitrogen, soluble and insoluble phosphates, and the potash contained in the said manure; in the third case the charge was for unlawfully permitting the analysis of the manure to be false under certain particulars, in that it did not contain any soluble phosphates or potash as implied in the invoice; and fourthly, with permitting the invoice delivered by the defendants to be false in material particular to the prejudice of the purchaser by stating that the manure contained  $\frac{1}{2}$  to 1 per cent. of sulphate of potash, whereas, it only contained  $\frac{1}{4}$  per cent. Mr. C. I. Fisher (instructed by Mr. M. F. Blakiston, clerk to the County Council) appeared for the prosecution, and Dr. Thomas, of Liverpool (instructed by Messrs. Grace, Smith, and Hood) represented the defendant company.—Mr. Fisher said the invoice set forth that the constituents in the manure were: Nitrogen, equal to sulphate of ammonia, 2.50 to 3.5 per cent.; sulphate, soluble and insoluble, 8 to 10 per cent.; sulphate of potash, .50 to 1 per cent. He urged that this was not a right guarantee under the Act, as the notice should have set forth the actual percentage of nitrogen, and that the soluble and insoluble phosphates ought to have been separately given, and potash, instead of sulphate of potash.—Mr. Brewster deposed that correspondence led to his ordering two tons of manure from the defendant company. According to the statement of analysis on the invoice he came to the conclusion that it meant so much nitrogen and so much potash. He communicated with the defendant's firm, and informed them of his intention of having a sample of the manure analysed. In cross-examination, witness said he was misled by the guarantee altogether.—Mr. E. W. T. Jones, analyst to the County Council for Staffordshire, gave evidence with respect to the analysis. The value of the manure was actually 30s. per ton, compared with £3 10s. per ton, the amount paid to the firm by Brewster. Mr. Jones was cross-examined with a view to showing that farmers buying manures were in the habit of judging the amount of nitrogen in it by the percentage of sulphate of ammonia. The witness denied that this was customary, adding that farmers did not understand it. It suggested that it was very misleading. The analysis of the chief analyst at Somerset House was

put in, and showed that the manure contained 1.17 per cent. of nitrogen, 0.13 per cent. of soluble phosphate, 8.53 per cent. of insoluble ditto, 0.135 per cent. of potash. Questioned with regard to this, Mr. Jones said the analysis was practically the same, as it only gave a mere trace of soluble phosphate, and he did not find sufficient potash in it to be of any practical value. He said .13 of soluble phosphate was an absurd amount to put into the certificate.—For the defence Dr. Thomas urged that to give the amount of sulphate of ammonia was the custom of farmers who purchased manure of the kind which was the subject of the present case. He argued that the guarantee on the invoice was definite, and would not mislead anybody, much less make any misrepresentation. He commented upon the discrepancies of the two analyses, and pointed out that with regard to the last charge there was some potash present in the manure. He suggested a great difficulty in finding the exact percentage of potash in every sample submitted from such a large bulk.—Mr. Beckett, manager and member of the defendant firm, was called, and stated that by stating the percentage of sulphate of ammonia was the usual way of letting farmers know the quantity of nitrogen in the manure.—Mr. W. E. Rowlands, chemical manure manufacturer, of Seacombe, said it was impossible to get a uniform distribution over the whole bulk of the manure of any substance present only in small quantities. He maintained that farmers were used to judging the quantity of nitrogen by the amount of sulphate of ammonia stated. He produced one of his own circulars, in which the manure was guaranteed in this manner.—A fine of £20 and costs was inflicted, but, in reply to counsel, the magistrates altered the penalty to a fine of £10 on the first two charges together, and £5 each for the other two.—Notice of appeal was given.

#### "PROFESSOR" SMITH ON THE EAST END WATER FAMINE.

THE following opinion is just what we expected from the professor of the "Smitheries":—

Professor Smith "is of opinion it is most desirable that cisterns should be provided in all houses, and he has so advised the sanitary authorities at Woolwich."

In his judgment the whole of the difficulty which exists in the East-end of London and partly in this district is due to the fact that this has not been insisted upon, and it is very unfair to blame the East London Water Company for the difficulty which now exists. This company has practically given the East of London an intermittent water supply—which is the kind of supply the whole of the houses in London receive—up to a recent date, and yet no difficulty was experienced because of the prevalence of cisterns. Of course the water in cisterns would become objectionable if care be not exercised; but under ordinary circumstances the water should not be drawn from the cistern for domestic use, but direct from the supply pipe, the cistern alone coming into use in case of any difficulty in the supply. Proper care must also be taken on the part of the householder to see that the water is continually renewed in the cistern.

Professor Smith, strangely enough, is taken seriously by a *Daily Chronicle* Commissioner, who says of his rubbishy opinions that he is guilty of one or two slight inaccuracies. First, the constant supply in East London is no new thing. Secondly, intermittent supply in London is now the exception and not the rule. Thirdly, the state of things before the constant supply in East London was as bad as it could be. Fourthly, landlords of small house property would never install such a complicated arrangement of taps and pipes as Professor Smith contemplates. Woolwich had better pause before it accepts its medical officer's advice.

THE SANITARY INSPECTORS AND CISTERNs.

Would the sanitary authorities be able to keep the



cisterns clean?—"I think an army of sanitary inspectors would be required," says Dr. Alexander. "I have no hesitation in saying," remarks Dr. Warry, "that it is absolutely impossible with the present staff of officers possessed by the local authorities of East-End parishes."

However, "Professor" Smith got his name in print, which, we should think, amply satisfied him, though why he should be unable to express a rational opinion on the subject is, we suppose, best known to himself.

#### THE SANITARY INSPECTORS' QUESTION AT THE SANITARY INSTITUTE CONGRESS.

On September 3, at Newcastle, there was a large attendance at the conference of sanitary inspectors, and much interest was evinced in the address of the president, Dr. Reid, Medical Officer of Health to the Staffordshire County Council, which dealt mainly with the grievances of which sanitary inspectors complain. He said there was a great need of reform in the existing relationship between sanitary officers and their authorities, and until that reform became an accomplished fact sanitary progress must be comparatively slow. Their chief grievances were—1. The frequent disregard by authorities, in appointing their officers, of evidence of qualification in the shape of experience and training in sanitary work. 2. The insecurity of tenure in such appointments. 3. Inadequate salaries and allowances. As regards the salaries paid in the case of towns of under 50,000 and over 30,000 inhabitants, the amount on an average was about £2 a week—the wages of a skilled artisan. Among the smaller towns the salaries varied very much, and extra duties of a varying nature, and not necessarily connected with sanitary work, were frequently imposed. For example, in one town with a population approaching 29,000, the inspector received for sanitary work £35 a year, whereas in another town with only 6,000 inhabitants, the salary for inspector's work proper was £80. The contrast was still more marked, however, for in the former case the salary was made up to £95 in return for additional work as rate-collector, while in the latter the salary was supplemented to £365, and extra duties as surveyor, engineer of a waterworks, and inspector of a rural district were also included. In nine only of the thirty-nine urban districts did the inspector possess any knowledge of his duties previous to his appointment. In twelve instances of towns with over 15,000 inhabitants, the inspectors admitted their inability to perform their duties properly, the reason given in four instances being that the supervision of refuse removal occupied too much of their time. The existing state of affairs should not be allowed to continue. It was unworthy of an enlightened community and unjust to a class of men who did their best to fit themselves to discharge duties the importance of which was daily increasing. There were already over 2,000 qualified inspectors in the country, and few men now dreamt of applying for posts which entailed so much technical knowledge unless they could show that they possessed that knowledge. It was unfair to expect so much unless in return for adequate salaries and security of tenure. What was to be the remedy? They appealed in vain to the Local Government Board. That Department was overwhelmed with work, most of which had no direct relationship to public health, and it was fettered by red tape. Sooner or later they must have a Government Health Department pure and simple, with a Minister at its head. That was the big reform they were all hoping for. Every effort must be made to ensure that the new Public Health Act, which it was believed would soon be introduced, should require that all applicants for inspectors' posts should be qualified, and that they should have security of tenure so long as they efficiently discharged their duties. He felt satisfied that if the supervisory powers now exercised—or,

rather, not exercised—by the Local Government Board were transferred to County Councils—the Central Board acting as an appeal authority—they would no longer have cause to grumble. (Applause.)

On Sept. 4, Mr. Thomas (Bermondsey) moved "That this meeting of sanitary inspectors, held in connection with the Newcastle Congress, recommends the Council of the Sanitary Institute to support the Superannuation Bill promoted by the Sanitary Inspectors' Association." The Bill provided that each inspector should contribute a certain sum towards his superannuation, and be able to claim it as a right. Allowances were made for the widow and children, in the case of the death of the inspector through any infectious disease or other cause. Provision was made for long service and subsequent employment.

This was seconded by Mr. F. T. Poulton (Staffs.), and unanimously agreed to.

Mr. F. T. Cass (Hull), discoursed on "The Duties of Sanitary Authorities in relation to Factories, Workshops, and Shops." He complained that the powers given to inspectors were not so great as they should be, and called attention to the great want of proper sanitation in many factories, workshops, bakehouses, and the like. He stated that to many local authorities the Factories and Workshops Act was a puzzle. He suggested that equal provision should be made for the cleansing and sanitation of workshops as in factories. Sanitary inspectors should be allowed to enter factories to see if the sanitary law was carried out.

Mr. Travis (Halifax) stated that the sanitary arrangements of factories were very crude indeed. He held that the arrangements should be equal with their homes. (Hear, hear.) Factories, generally, were the breeding ground for typhoid fever. (Hear, hear.)—Mr. Lindley (Batley), Dr. Manley (county medical officer for West Bromwich), Alderman Tattersall (Batley)—who urged the infliction of heavier fines on factory owners neglecting the Act—Mr. Woodhouse (Accrington), Mr. Thomas, and Mr. Bland (Urmston), followed, adversely criticising the Factories Act.

The Chairman thought there would be a better chance of getting the Act put right, as they had got a medical officer of health at the top of the tree—(hear, hear)—as chief factory inspector.

#### THE NEED FOR COMPENSATION FOR TUBERCULOSED CATTLE.

THE eighth annual meeting of the South Durham and North Yorkshire Veterinary Medical Association was held on September 4, at Darlington. Mr. H. H. Roberts, the new president, delivered his inaugural address. He said that the sooner the Board of Agriculture took up the matter of tuberculosis and it became a scheduled disease the better it would be for the consumers of meat and milk, more especially the latter. By the use of tuberculin they were now enabled to lay their hands on the most dangerous source of the disease. The present inspection of meat system was in a most unsatisfactory condition, and, until private slaughter-houses were abolished, the duties of the inspector could only be carried out in a very incomplete manner. Properly qualified men as inspectors should be appointed, as in Manchester.

We are glad to see the supporters of this necessary sanitary reform becoming daily more numerous.

The *Dundee Courier* has also very decided opinions on this question. It says:—

"A question of so great importance as that of tuberculosis could not well escape the notice of the Sanitary Congress which has been holding its sittings this week at Dumfries. By Dr. Chalmers, Glasgow, a paper was read in which he advocated legislation which would not



allow any tuberculosis animal to remain in a dairy. This somewhat vague programme, however, was not approved, exception being taken to various details. There can be no doubt that the best method of preventing tuberculosis infection through the dairy is that which has frequently been advocated by agriculturists, and which was described yesterday by the Rev. J. Gillespie as the 'putting down of tuberculosis cattle altogether.' In order to attain that end, however, it would be necessary for the Government to allow compensation in the manner adopted in cases of pleuropneumonia. Without compensation, it is to be feared, there will be no effectual remedy. The expense would certainly be great, but it would, after all, be a trifle compared with the terrible results of the present defective system of dairy control."

It is surprising that the President of the Board of Agriculture has not up to the present recognised the justice and public necessity of compensation.

#### OUR MEAT AND MILK SUPPLY AND THE LAW RELATING THERETO.

A PAPER by Mr. G. T. Billing (Holborn) on "Our meat and milk supply and the law relating thereto," was read at the Sanitary Institute Congress on Sept. 4. He stated that the principal supplies of meat were obtained from America, Australia, Canada, Russia, Holland, Scotland, Ireland, etc. The live animals were landed in a state of high nervous excitement, with the result that, when slaughtered, decomposition speedily set in. Large quantities of frozen meat were also imported into England, as were also many very young dead calves, and even some which were stillborn. (Laughter.) A meat inspector should have a knowledge of and also know the position of the various lymphatic glands, for, in some cases, all other evidence of the disease may have been removed. Inspectors should co-operate with the medical officers of health in all matters relating to the inspection and seizure of unsound food. For the more efficient inspection of meat, he would suggest that all owners of live stock should be compelled to notify the illness or death of any animal belonging to him, and also that animals should be slaughtered in public abattoirs under proper inspection. He pointed out certain weak points in the Public Health Acts. He gave an instance of a case in which he had examined some meat, and pronounced it unfit for food. Whilst he was writing out the order condemning it an employee of the butcher destroyed the meat, thus preventing the possibility of a magistrate examining it, and, therefore, no prosecution could be taken for exposing unsound meat for sale. The employee was summoned for obstruction, but the maximum penalty for that offence was much smaller than for the other. With reference to milk, it was of the utmost importance that milk should be pure and free from the germs of disease. Tuberculosis was most prevalent in cows kept in town cow-houses, and was due, to a great extent, to the want of proper cleanliness, ventilation, drainage, wholesome water supply, etc. Inspection should be made at milking and feeding time, especially in the morning, which was the best time to detect nuisances likely to be met with in cowsheds and dairies. Milk cans should not be left at houses in which there were cases of infectious diseases. All milk should be sterilised, at the dairy if possible, for a great number of people would not take the trouble to do so, notwithstanding the risk incurred.

Mr. Moody (Grimsby) referred to the question of cubic space in cowsheds, and also declared that all private slaughter-houses in towns should be abolished. (Hear, hear.)

Mr. Gatcliffe (Newcastle) spoke with regard to certain objectionable features in the milk trade.

Other gentlemen spoke on various points raised on the paper, and the Conference then ended.

#### THE "MIDDLESEX CHRONICLE" ON SOMERSET HOUSE.

THE question is what is an "analytical chemist," and what is a "public analyst?" To describe himself as a public analyst nowadays a man does not need even to be retained as a consulting analyst to the parish council of some remote country hamlet. All he may mean by the description is that he is willing to act as witness for the defence in adulteration cases, or to write puffs of somebody's wholemeal bread or "superfatted" toilet soap. Of course, I know nothing of the witnesses in this particular case, but it does seem ridiculous to have the Wood Green Council prosecuting, and the so-called "public analyst" giving evidence against them. If anyone was the public analyst in the case it was the analyst retained on behalf of the public, and not against them.

The difficulty at present is that the chemical court of appeal—the experts at Somerset House who act for the Government—are behind the times, and have less weight with the public than many private professional men. Some of the principal Somerset House appointments were made many years ago by "nomination" from among constituents of Government supporters in the House of Commons, and this method of selection does not always secure the highest scientific attainments. Somerset House wants overhauling, and there should be available everywhere real "public analysts," with a recognised *status* and definite connection with the local governing bodies.

#### HOW THE WEATHER AFFECTS POTTED MEAT.

Two cases under the Public Health Act were heard by Mr. C. M. Atkinson, stipendiary magistrate, at Leeds Police-court on September 4.—The defendant in the one case was Robert Bullock, provision dealer, 12, Neville-street, School-close, and in the other Alfred Clay, pork butcher, who lives at Pudsey, but who has a shop at 46, Burley-road, Leeds.—Mr. Swallow, chief sanitary inspector, stated that he visited Bullock's shop and found a mould containing 2½lb. of potted meat, which was in a putrid state. It was subsequently destroyed by order of the justices. Mr. Swallow said he asked Bullock if he thought the meat fit to eat. Defendant replied that he did, and that he ate it himself.—In answer to Mr. Hemingway the inspector said he visited the shop in consequence of meat purchased there having been taken to the Sanitary Office.—Dr. Cameron, the Medical Officer of Health, stated that the meat seized was brought to him for examination, and he had no hesitation in condemning it.—Inspector Walker also agreed that the meat was not fit to eat.—Mr. Hemingway, for the defence, called Clay, who manufactured the potted meat in question, and supplied it to Bullock and other customers. He declared that the meat was quite satisfactory when it left his hands the day preceding that on which the seizure was made. The weather that day was very sultry, and it unfortunately happened that the sun shone on Bullock's shop window for six hours during the middle of the day. The great heat would probably turn the meat sour. He was shown the meat seized by Mr. Swallow, and though the outside was bad the inside portion was, in his opinion, still good.—Mr. Hemingway, on behalf of his client, maintained that the condition of the meat was due entirely to the atmospheric conditions prevailing, and explained that one or two other moulds on Bullock's premises at the time of the inspector's visit, and which were part of the same "boiling," were found to be perfectly sweet and good. The defendant had no idea that this particular mould had gone bad, and it would therefore be hard on him to suffer a conviction under the circumstances.—Mr. Atkinson said there was no doubt the



meat was unfit for food, and the defendant ought to have become aware of its condition. In order to warrant a conviction, however, it was not necessary that personal knowledge on the part of the defendant should be proved.—The case against Clay was then gone into. It appeared that a visit was paid to his shop, and there, also, some bad potted-meat was found. Five moulds under the counter were, however, good.—The Stipendiary Magistrate decided to fine Bullock £3, and ordered Clay to pay a fine of £5.

### SHELL FISH AND FEVER AT THE SANITARY INSTITUTE CONGRESS.

DR. ARTHUR NEWSHOLME read a paper, on Sept. 4, on "The Spread of Enteric Fever by Means of Sewage Contaminated Shell Fish." He said it was certain that enteric fever was caused by the inhalation or the swallowing of micro-organisms, most commonly conveyed by milk or water. It was probable that the effluvia from defective drains might cause it, although having regard to the fact that defective drains were comparatively common, and enteric fever comparatively rare, it was doubtful whether the connection between bad drains and enteric fever had been clearly established. After giving a large number of statistics, he said there could be no doubt that enteric fever was much more likely to be caused by the eating of sewage contaminated shell fish than by the inhalation of drain effluvia. Nearly every outbreak of enteric fever during recent years had been traced to the swallowing of specifically contaminated water or milk, while the number of outbreaks attributed to the inhalation of effluvia had steadily diminished. In summing up his inquiries, the evidence left little doubt that sewage contaminated shell fish were a cause of fever.

Sir Joseph Ewart said he had arrived at exactly the same conclusions, and so soon as they convinced the public of the spread of typhoid fever by oysters, a great benefit would be obtained.

D. Willoughby, of Eastbourne, said he had also traced cases of typhoid to oyster eating.

### THE SHIP CANAL "SORE THROAT."

At the monthly meeting of the Warrington Town Council, Alderman Francomb again called attention to what he called the horrible stench at Wilderspool, arising from the disused portion of the Mersey. His house at the present moment was like a hospital; everybody was ill with sore throats.—Councillor Woods fully sympathised with Alderman Francomb. The effect was not confined to Wilderspool; he could feel it every night in his house in Sankey-street, for when the dew fell the stench was carried right up into the centre

of the town. The greatest pressure should be brought upon the authorities to remedy it.—The Town Clerk explained that a hitch had arisen between the Corporation and the Runcorn authorities, and the latter declined to sign the agreement that had been prepared between them.—Councillor Heaton said the Corporation were quite justified; they must have the money from the Runcorn authorities before they began the work: for they were the party who had to pay.—Alderman Francomb: That is said without any feeling; it is too serious to be wrapped up, for in the meantime you are poisoning people alive.—Councillor Roberts said that, although the matter did not strictly appertain to the Rivers Committee, he was very glad the discussion had been raised, because it enabled the Council to feel the responsibilities they laboured under in regard to their duty to the unfortunate people who lived near the old river. At the same time it was hardly fair to expect the Corporation to take up a position which might make them solely liable for the expense of the necessary drain, and he did not wish to say anything likely to strain the friendly relations between Runcorn and Warrington. So far as the Rivers Committee were concerned, they were fully determined to give every assistance to put the matter of purifying the old river as efficiently as it was possible to do. They had now the old river, the river itself, and the Ship Canal to deal with—three streams instead of one. Many people were suffering from sore throats, which were undoubtedly imputed to the impurities given off by the Ship Canal. Indeed, these sore throats had now become known as the "Ship Canal sore throats."

### MARGARINE.

At West Bromwich, on September 4, James Foster, grocer, of Ebenezer-street, Hill Top, was summoned under the Margarine Act for selling adulterated butter.—George William Davis, inspector under the Food and Drugs Act, stated that he visited defendant's premises to examine the scales. On the table were three dishes of butter. Witness asked to be supplied with half a pound, and upon it being analysed it was found to be adulterated with 75 per cent. of foreign fats.—Defendant was fined in all £3 19s. 6d.

MR. JOHN KNOWLES, Church-street, Haslingden, was summoned at Haslingden Police-court, on Aug. 31. The inspector saw what he supposed to be a quantity of butter. Half-a-pound was purchased for 4½d., and defendant told the purchaser that it was margarine whilst he was weighing it. It was stated that defendant had been in business for sixteen years, and this was the first time he had been prosecuted. It was explained that the inspector visited the shop just prior to its being closed for the Wednesday half-holiday. Defendant had just removed the label in order to place a fresh supply of margarine on the slab. The Bench considered that a technical offence had been committed, and fined him 1s. and costs.

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**£2 FOR A BULL AND A COW THROWN IN.**

At the Jarrow Police-court on August 31, Joseph Jackson, butcher, of Back North-street, was summoned for having in his possession, on August 12, for sale purposes, unsound meat.—The Town Clerk (Mr. W. S. Daglish) prosecuted, and Mr. E. Clark, of Newcastle, defended.—Dr. J. M. Nichol, Medical Officer of Health, deposed that on visiting defendant's premises at 2 a.m. on the 12th ult. he found there the carcase of a cow, dressed, having evidently been prepared for sale. He seized it, and left a police-officer in charge. Mr. Jackson called upon him later, and, representing that he had been unable to find the sanitary inspector, asked witness to come to his premises and examine the carcase of a cow, which he said he had bought subject to its being passed or otherwise by the sanitary officer. Two hours later the carcase was condemned.—By Mr. Clark: There was a bull alive in the stable, and witness told defendant he must give him two hours' notice when he was going to kill it, so that he could be present to examine the animal. He did not receive the notice, but, by accident, he was present when the bull was killed. It was also condemned, and was the subject of another case.—Mr. Moore, veterinary surgeon, said the carcase of the cow was practically a skeleton. On examining the internal organs he found extensive tuberculosis of both lungs and of the bronchial tubes. It was totally unfit for human food.—By Mr. Clark: All the intestines had been left for him to examine.—A drover, named Wardle, deposed that defendant bought a bull from his master in the Newcastle market on the 11th ult. for £2. The dealer had a cow which he was going to send to the knackers, but, when defendant took the bull, he threw in the cow along with it to complete the bargain.—By Mr. Clark: There was nothing said about any payment for the cow. That animal was thrown in.—Mr. Clark submitted that the cow was bought subject to its sale being approved of by the Jarrow sanitary officials, and that every facility was given to the officials to examine it. That the carcase was bad, and that it was properly condemned he admitted, but he held that the evidence showed that there was no intention to sell without the approval of the authorities, and therefore they were not liable.—The Bench held the case was proved and imposed a fine of £5 and costs.

In the second case concerning the bull, the veterinary surgeon said the animal was emaciated, and the flesh soft and unsound. The Bench decided to give the defendant the benefit of the doubt as to his intention, and dismissed the case.

**BATH FOLLOWS SOUTHPORT IN BURKING THE ACTS.**

At the last meeting of the Bath Sanitary Committee the chairman mentioned that he had just received an anonymous letter signed "Mother." As mothers were rather prolific in Bath, he asked whether the letter be laid on the table. It was on the subject of milk. Alderman Clerk: I suppose mother wants pure milk unadulterated. The chairman said that was so, and the letter was not read.

A milk seller named Charles Coates, Lower Bristol-road, appeared before the committee with respect to a sample of milk which he had sold to the inspector, and which, upon analysis, had been proved to be of the poorest possible quality. The milk vendor's story was that he received it direct from the farmer, and that it came direct from the cows. (Laughter.) The chairman said he thought the milk came from the bottom of the can, that nearly all the cream had been sold and only the poorer milk left behind. It was not adulterated, but only of a very poor quality. They could not prosecute in the matter, and it was not his wish that the man should be brought up. Mr. Tonkin moved that the matter be allowed to drop. After some further discussion and the

production of the analyst, Mr. Roadhouse urged that the committee should exonerate the man from blame. He remarked that of late feed had been very inadequate and farmers had been at their wits' end to know how to feed their cattle. If there was only one pasture to feed the cows on, it would affect the milk. If they blamed anyone it should be Providence.

We quite agree with Mr. Roadhouse that Providence should be blamed. If Providence knows no better than to send such a crowd to represent the Bath public on a Sanitary Committee no blame can be too severe for it.

**BEER AND EXCESS WATER.**

At Westminster, on September 5, George Benjamin Fielder, of the Black Horse, York-street, Westminster, was summoned by the Excise authorities for diluting beer. Mr. Hawkins, who prosecuted, said two samples of ale were taken on June 10, and both were found diluted—in the one case to the extent of nearly two gallons, and in the other to  $3\frac{1}{4}$  gallons to the 36-gallon barrel. Mr. de Rutzen inflicted a penalty which, including costs, amounted to £15.

At West London Police-court, Emma Mann, a beer retailer, of Portobello-road, Notting-hill, was summoned by the Excise for diluting beer to the extent of three gallons to a barrel of 36 gallons. Mr. Hannay was not disposed to convict for diluting the beer, as it was not proved to his satisfaction that it was done by the defendant. He said he was prepared to convict the defendant for having it in her possession. At the suggestion of the magistrate the summons was adjourned.

**COFFEE.**

At Bury, on August 31, W. H. Stark and Son, Agur-street, Bury, were summoned for selling coffee adulterated with 25 per cent. of chicory. Mr. Bertwhistle, who appeared for the defence, applied for an adjournment of the case on the ground that the person by whom the coffee was sold was ill in bed. The application was granted.—John Carroll, grocer, of 16, Union-street, Bury, was next summoned for selling coffee adulterated with 5 per cent. of chicory. In this case, Mr. Bertwhistle, who appeared on behalf of defendant, pleaded guilty. The Town Clerk stated that Inspector Cass sent a man into the shop of defendant to purchase the coffee, which was subsequently found to be adulterated with 5 per cent. of chicory. Inspector Cass gave evidence in support of this statement. Mr. Bertwhistle asked the magistrates to deal leniently with the defendant in view of the fact that the adulteration was very small, and also that the defendant had purchased it as pure coffee. The defendant was fined 10s. and costs.

**FOWLS AT SIXPENCE EACH.**

John George, of Camberwell-road, was summoned at Lambeth, on September 4, by Dr. George Millson, medical officer to the Newington Vestry, for having, on August 27, exposed for sale, at 29, Camberwell-road, three fowls which were unfit for the food of man. There was a second summons against the defendant for exposing an unsound fowl for sale at No. 11, Camberwell-road.—Dr. Millson stated that on August 27, at the defendant's shop, No. 29, Camberwell-road, he seized three fowls which were in an unsound condition and unfit for human food. They were exposed for sale in the front part of the shop, and were marked 6J. He saw the defendant, who said he did not think the fowls



were quite so bad as they were. At the defendant's other shop, No. 11, he seized one fowl which evidently belonged to the same parcel, but which was not in such a bad condition as the others. That was also exposed for sale, and was marked 6d.—Mr. George now said he had been to market in the morning and arrived home late. If he had been back first thing the fowls would never have been exposed for sale. He had been 17 years in business and had never had a complaint made against him before. The fowls were very small and were only about the size of pigeons. When they were fresh they were sold for 1s. 3d. It was entirely the fault of his man.—Mr. Hopkins ordered the defendant to pay a fine of £5 upon each summons.

#### MILK.

At Wolverhampton, on September 4, James Smith, of 49, Gower-street, Willenhall, was fined £3 and the costs for selling milk from which 16 per cent. of the original fat had been abstracted. The evidence showed that the milk was sold as new.—Job Eggington, of 41, Ash-street, Wolverhampton, was fined 20s. and the costs for selling milk from which 10 per cent. of the original fat had been abstracted.

At Trowbridge, on September 4, George Giles, milk seller, Trowbridge, for selling adulterated milk, on August 22, was fined 10s.

At Wolverhampton, on Sept. 1, Charles Stringer, of Bentley, near Walsall, was summoned at the instance of Mr. H. Van Tromp, county inspector under the Food and Drugs Act, for selling adulterated milk.—Defendant's son sold a pennyworth of milk to Samuel Toy, sub-inspector, and on it being analysed it was found to have had 13 per cent. of its cream removed and to be slightly watered.—Defendant said the milk was sold the same as it came from the cow, and he could only account for it owing to the dry weather.—Mr. Neville said the dry weather would not cause the cow to give watered milk. Stringer was ordered to pay 34s. 6d.

#### AN ADULTERATION PROSECUTION IN SOUTHPORT AT LAST, AND THE RESULT!!

At Southport, on September 7, Thomas Iddon, farmer, Bretherton, was summoned for selling milk adulterated with 3 per cent. of water, on July 23.—Mr. J. Davies Williams, Town Clerk, prosecuted, and Mr. S. Brighouse defended.—On the day named a consignment of milk from the defendant to John Hough, milk-seller, Zetland-street, was sampled at the West Lancashire Railway Station by Thomas Cadwell, one of the health inspectors for the Corporation, and on analysis by Mr. W. J. Orsman, the borough analyst, it was found that the milk contained 3 per cent. of added water.—Mr. Brighouse raised a number of legal points on behalf of the defence—first that the authority of the officer to take these proceedings had not been proved; then no contract between the defendant and Hough had been proved; next, he contended that a sample of milk should have been divided into three parts, and to take three dips into a can and fill three bottles in that way did not comply with the provisions of the Act; then, that no notice of these proceedings had been given to the defendant or his agent, and he had no opportunity of having an independent analysis made. Mr. Brighouse also complained that the defendant was interrogated by the Town Clerk in his office on the day the summons was served. Coming to the facts, he said that the defendant had twenty milking cows on his farm, and had been sending forty-five gallons a day to Mr. Iddon. He had been in business for many years, and had never been summoned for any offence of this kind, and the witnesses he had

to call would prove that no water whatever had been added.—After witnesses had been called, the magistrates retired, and on coming into court again the Mayor (Councillor Eastwood) announced that the case would be dismissed.

#### UNSUCCESSFUL MILK PROSECUTIONS IN BRADFORD.

At Bradford, on September 1, a farmer named Henry Raistrick, occupying Cullingworth Fields Farm, was summoned under the Food and Drugs Act for offering for sale adulterated milk. Mr. F. Stevens, of the Town Clerk's department, prosecuted on behalf of the Sanitary Committee of the Bradford Corporation. Inspector W. C. Rhodes stated that on the 19th ult. he was present at the Exchange Station, Bradford, on the arrival of the 7.35 a.m. train from Cullingworth, with which the defendant travelled in charge of two cans of milk. He took a sample pint from one of the cans, for which he paid 1½d. He divided it into three parts, one which he left with the defendant, while another he sent to Mr. Rimmington, the public analyst. Mr. Rimmington's analysis showed that the milk contained 10 per cent. of added water, and 10 per cent. of the natural fat, the cream, had been abstracted. The defendant denied that anything had been added to or taken from the milk as it left the cow.—The Magistrates dismissed the summons, adding that there was no evidence of felonious intent at adulteration.

#### THE MILK SUPPLY OF LIVERPOOL.

UPON the suggestion of Alderman Smith, a letter received from the Liverpool Cowkeepers' Association was read at the last meeting of the City Council. The communication alleged that Mr. Shelmerdine, a member of the City Council, in a speech he had made, had brought some accusation against the cowkeepers of the city, and they requested that the accusation be withdrawn "in as mild and speedy a manner as possible," failing which the association would take action in another form. The produce of the Corporation sewage farms, the letter proceeded, was bought by cowkeepers of the association, and it would be a question as to whether the animals were affected in the milk by the use of such produce. No member of the association would keep a diseased cow if he knew it.

Alderman Houlding remarked that the letter was in the hands of the medical officer of health at the present time, with instructions that he should analyse various samples of milk to see if any tuberculosis was present, as had been suggested by Mr. Shelmerdine. No doubt there would be a report at an early date.

Alderman Smith thought an inquiry should be made as to the suggestion relating to the products from the sewage farms. He personally did not think there was very much in the suggestion, but the Council ought to be sure as to whether it was an idle threat or whether there was anything deleterious in the produce. It was an extremely serious question affecting the health of the community, and bearing in mind the high rate of mortality among infants in the city, too great care could not be taken in dealing with a question of such magnitude.

Alderman Cookson said that every item in the letter would be reported upon by the medical officer of health. The milk supply of Liverpool was being tested in a very severe manner at the present moment, not only as regards purity, but also as regards anything in the nature of tuberculosis. It had been tested, and so far it had shown nothing of the kind. He hoped there would be no scare in regard to the supply of milk in the city. The public might be assured that the Health Committee were doing everything in their power to preserve the purity of the milk supply. The medical officer had been away on his holiday, hence the delay in reference to the report.



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W.  
Wakefield & Sons, 140, High-road, Streatham,  
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Wahnrow's Stores, 38, Store-street, Tottenham  
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W. Whiteley, Queen's-road, Westpoune-grove  
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# Food & Sanitation

THE PUBLIC ANALYTICAL JOURNAL.

[Registered at the General Post Office as a Newspaper.]

VOL. VII.—No. 215.

LONDON: SATURDAY, SEPTEMBER 19, 1896.

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M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad Typhoid Fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

SIR HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

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## Food and Sanitation.

SATURDAY, SEPTEMBER 19TH, 1896.

### NEGLECTED INDUSTRIES: EGGS.

THE late Major Morant years ago pointed out how neglected this industry was. Imported eggs and poultry he calculated had an annual value of nearly *six millions sterling*, and the bulk of these might be raised with profit in the United Kingdom.

In the July number of the *Deutsches Handels Archiv*, the official journal of the Home Office of the German Empire, there is a valuable Report, showing that during the year 1894 the Empire of Germany imported 1,565 million foreign eggs, as against 1,425 million foreign eggs imported into Great Britain. During 1894 the

consumption of imported eggs per head of the population in the German Empire was 30, and in the United Kingdom 37. In the United Kingdom the consumption of imported eggs has risen from four in 1853 to 39 in 1895, and there is evidence to prove that fully 90 per cent. of the eggs used in the towns of Germany and England come from abroad. In presenting these facts, the German authorities suggest to the German farmers how profitable and extensive a business poultry farming might become if properly developed and organised. That trading in stale eggs pays may be inferred from the fact that there are firms that handle from 75 to 125 millions annually.

In the wholesale trade the capital invested in eggs is turned over some five or seven times during the season, and were it not for deterioration before the eggs can be marketed, there would be profits from 15 to 40 per cent. on each turnover with eggs from distant countries. Hence any means that can eliminate risk in trading with such a perishable article as an egg inaugurates an entirely new industry, and persons exporting eggs from distant countries cannot fail to realise profits hitherto never dreamt of in any trade or industry. The number of foreign eggs brought into this country during the year 1895 was 1,526,675,040, their import value amounting to £4,003,440, every penny of which might have found its way into the pockets of Englishmen, if poultry-keeping were seriously undertaken as an industry, and a proper system of egg-collecting were to be established.

Dr. Alexander, not long ago, suggested one method of bringing sweetness, light, and improvement to the East End, viz., to utilise the back-yards for other purposes than collections of tinned meat cans and rubbish. A garden and fowl-house are easy to make. Any handy person can make a coop, with room for perches and nest boxes for half-a-dozen fowls out of a couple of empty Tate's cube-sugar boxes, costing about eightpence. Sufficient wire netting for a run, with uprights, can be bought for a couple of shillings. Ashes from the house-fires put in daily make an excellent flooring for run and coop, and scraps, now wasted, bits of fat, fish-bones, the outside leaves of cabbages, etc., in fact, food scraps of any kind all come in useful for the fowls' morning meal. A handful of scraps per fowl each morning, and a handful of hard corn for each per afternoon is as much as they need to keep them in a healthy, laying condition. It is not necessary to keep a cock, which by crowing may be a trouble to neighbours, as hens lay quite as well without the male bird. Considering how easy, interesting, and useful is the keeping of fowls, it is surprising that thousands who have space and opportunity are content to eat "shop 'uns," and that there should be so many thousands of back-yards in London that are now dirty eyesores, which a very little trouble would make useful and picturesque. Here and there one comes across a workman's back-yard turned to good account, but go in whatever direction you please in London, the view from a railway train is depressing. Those engaged in parish work have first-rate opportunities for good, in teaching the persons they visit things of this sort. The cost is less than tracts, and in every way better.

### THE PURE MILK QUESTION.

A MAXSTOKE correspondent writes:—

"It is high time honest people, whether farmers or traders, leagued themselves together for the protection of their common interests, so that by some means punishment should fall where it is due. That the law ever contemplated making farmers responsible for the purity of their milk after it had left their hands and passed entirely out of their control seems hard to believe. Yet such is the case, and our legislators, who profess such concern for the farming interest, might



soon prove their sincerity by amending the law, so that the farmers' responsibility should cease as soon as the milk was handed over to the railway company.

"As to the system of inspection at present in force, it fails to bring wrongdoing home to the wrongdoer. A step in the right direction would be for the churns either to be locked during transit, or some means of fastening adopted by which the milk would be inaccessible to any but the consignee. Some time ago an incident was brought under the writer's notice very forcibly illustrating this. It was the early hours of a June morning. On a platform at New-street Station were several churns of milk standing. An employee of one of the railway companies was seen to go twice and dip a vessel into a churn of milk, helping himself and handing some to a comrade. Whether any water was added in this case is not known, but it is a well-known fact that cream begins to rise to the top as soon as the milk is still, and in a few hours most of it is there, consequently anyone taking out milk without first well stirring it would have the bulk of the cream, and in such a case the unfortunate farmer who sent the milk might be prosecuted and convicted for abstracting cream from, if not adding water to, his milk, the inspector coming on the scene in time possibly to sample the milk before it was taken away.

"Again, it is matter of common knowledge that milk from a given farm—aye, from one and the same cow, will vary considerably, both in quantity and quality. And how is this to be remedied? Not by alteration of diet altogether, for cases have been known where milk, having been shown to be of poor quality on an analyst's certificate, has in a short time, and without any alteration in feeding, been proved by the same analyst to be of good quality. Some standard ought to be adopted to allow of these variations, which are due to causes beyond the farmers' control."

#### ICE CREAM PLUS ZINC.

Ice cream with many millions of microbes per square inch was bad enough, but ice cream plus zinc would be objected to by the merry microbe itself. We do not know if Mr. Isaac Brooks had sworn eternal enmity to microbes, and forgot that what would corpse a microbe might also corpse a small boy, or if he was experimenting upon the "what to do with our boys" problem. However, he appeared at Brentford petty sessions on Sept. 5, summoned under the Food and Drugs Act for having sold to Inspector Tyler ice cream which, on analysis, was found to be adulterated with a proportion of zinc. The defendant pleaded not guilty, but admitted the sale of the article.—Inspector Tyler said that on July 29 he was at Kneller Hall, and his assistant purchased some ice cream from the defendant. The defendant was told what it was bought for, and it was afterwards sent to the public analyst, Mr. Bevan, who certified: "I am of opinion it contains .01 per cent. of zinc, which is equivalent to 7-10ths of a grain per lb." This was not the first time he had sampled the defendant's goods, and he had always found them good. He had made enquiries in the trade, and found that the adulteration might have been caused by the wooden spoon used in serving out the cream rubbing off some of the zinc pail.—Mr. Allen Brown: The zinc might have become oxidized, and so have been drawn off by the spoon?—Yes.—Mr. Allen Brown: When not oxidized it would not be drawn off?—No.—The Chairman: Is there anything injurious in colouring matter?—No.—He added he had seen Dr. Dixon, the assistant medical officer for the district, who told him there would be no danger to life in such a small quantity of zinc.—The defendant said the acid he used played on the zinc, and the cutting round the top and twirling about of the pail rubbed a little off.—Inspector Tyler said that at Bradford a lad was killed through eating ice cream, but

there the jury found that the article was sour, through being stale.—The Chairman said that Inspector Tyler had acted quite rightly in bringing the case forward. The defendant must be careful how he used acids, and prepared the ice cream. He would only have to pay the costs.

Mr. Brooks got off easily because the offence, like the servant girl's baby, was only a little one, but Mr. Tyler did well to bring the case before the court, because it will lead ice-cream makers and vendors to exercise more care in their business.

#### STERILISE THE MILK.

THE agricultural correspondent of the *Yorkshire Post* says that, according to Dr. Nivan, of 500 children who died from diarrhoea in Manchester in the months of August and September of last year 485 were hand fed, and, according to the President of the Manchester Medical Society, Dr. Ashby, children fed upon cows' milk either entirely or partially during the first three months of their lives are 50 times as likely to die of diarrhoea as other infants, and this is almost solely owing to the fact that milk contains germs which are deleterious to the delicate little organisation of the child.

I have elsewhere urged on very many occasions that by the introduction of sterilisation an enormous number of lives will be saved, while the health of the consumer will unquestionably be less often attacked. A friend of mine, well known to many in England, Prof. Lèzé, has, in conjunction with M. Pellerin, who is a power in France, concluded some experiments which have enabled him to lay down a principle of successful sterilisation. When a temperature of 158deg. F. to 167deg. F. was adopted the results were not perfect, but by heating to 185deg. F. for an hour the result was all that could be desired. Bottles are filled with milk to five-sixths of their space, they are then hermetically sealed, and being placed in hot water, the temperature is gradually raised to 185deg. F., at which degree it is maintained for an hour, after which it is allowed to cool gradually, and the work is complete. Milk treated in this way has been kept for six weeks, and subsequently submitted to a temperature of 95deg. F. for eight or ten days without having suffered any apparent change. The cream rises in the ordinary way, but it is reincorporated with the milk by shaking. The flavour is said by Professor Lèzé to be as sweet and fresh as that of natural milk, and there is no increase in the acidity. Submitted to the action of rennet, coagulation follows naturally, whereas milk which has been boiled coagulates in a characteristic manner. It appears that under this process, the gas which is disengaged is redissolved during cooling, whereas in some cases milk is deprived of its gas altogether, and from this point of view does not resemble natural milk. The process is not successful where lactic acid is present to the extent of two grammes per litre, indeed the experimenters say that if it is present to the extent of 1.7 grammes, it is prudent to refrain from any attempt to sterilise.

I paid considerable attention to the process of sterilisation at the recent Royal Show. In the first place it may be remarked that heating milk will not remove the dirt which is present or the germs which the process is intended to destroy. In a large American factory the milk is passed through a centrifugal separator before delivery. The same plan is adopted in this process, inasmuch as the foreign matter present in milk is removed more effectually than is possible by the adoption of any ordinary system of filtration. The cleaned milk is automatically passed into the bottles in which it is subsequently sold. These bottles, with their trays, are placed in the heating chamber, where they are submitted to a specific temperature. The object is in the first place to destroy mature germs and to incite



into life the spores which are present. A second heating consequently takes place, but this time the temperature adopted is higher. The second heating is intended to destroy the germs which have been produced from the spores already referred to. It is scarcely necessary to remark that the process of cleaning or purifying the bottles is almost as important as the process of sterilising itself.

I am so strong a believer in the importance of milk as a food and of taking the precaution to destroy the germs that are invariably present, that in my own household the whole of the milk consumed, and it is considerable, is boiled in the absence of any simple plan of sterilisation. It is practically impossible for the farmer to do much, if any more, than he does to ensure purity. I have no desire to give away the farmer's case, but I am satisfied that under the present conditions absolutely pure milk is impossible, and that, short of boiling or sterilising, there are no other means of guarding against possible dangers. Every constant milk consumer runs a certain risk, and it is therefore essential that the consumer himself and those who cater for him should take those precautions which are at hand in order to safeguard health and life. We reject fish, meat, fruit, and vegetables when decomposition has commenced, and persons are liable to heavy penalties and even imprisonment if they offer some of these foods for sale in an unfit condition. But in the case of milk, inasmuch as it is impossible to tell whether it is sound or not and free from danger, we are compelled to take great risks, which are daily repeated unless we choose to adopt the methods which have already been recommended.

#### THE SANITARY INSTITUTE EXHIBITION AWARDS.

The following awards were made on September 2:—

##### SILVER MEDALS.

Burroughs, Wellcome and Co., Snow Hill-buildings, London, E.C.—Disinfecting solids.

F. C. Calvert and Co., P.O. Box 513, Manchester.—Carbolic acid preparations.

Davis Gas Stove Co., 200, Camberwell-road, London, S.E.—Enamelled "Metropolitan" gas kitchener.

J. Defries and Sons, Limited, 147, Houndsditch, London, E.C.—Geneste Herscher saturated steam disinfectant.

The Expanded Metal Company, Limited, 39, Upper Thames-street, London, S.E.—Expanded metal.

##### BRONZE MEDALS.

Atkinson and Philipson, 27, Pilgrim-street, Newcastle-upon-Tyne.—Ambulance van, St. John pattern.

Atkinson and Philipson, 27, Pilgrim-street, Newcastle-upon-Tyne.—Doctor's light brougham.

Blondeau et Cie., Malden-crescent, London, N.W.—Vinolia soap.

A. Boake, Robert and Co., Stratford, London, E.—Liquefied sulphur dioxide.

Brady and Martin, Northumberland-road, Newcastle-upon-Tyne.—Apparatus for demonstrating the phenomena of heat, sound, light, magnetism, electricity, etc.

British Sanitary Company, 56, Bothwell-street, Glasgow—Dodds' helical spring bed rest.

British Sanitary Company, 56, Bothwell-street, Glasgow—Earth-closet.

Burroughs, Wellcome, and Co., Snow Hill-buildings, London, E.C.—Syringe for injecting anti-toxic serums.

Cadbury Brothers, Bournville, Birmingham—Essence of cocoa.

The "Cannon" Hollow-ware Company, Limited, Deepfields, Bilston—The "Hercules" gas cooker.

John Carr and Sons, Low Lights, North Shields-on-Tyne—Enamelled and decorated fireclay tiles.

The Cordelova Company, Limited, 74, Pitt-street, Edinburgh—Cordelova well coverings.

Crosier, Stephens, and Co., 58 and 60, Collingwood-street, Newcastle-upon-Tyne—Glass with embedded wire.

Elswick Court Marble Works Company, Northumberland-street, Newcastle-upon-Tyne—"Hotspur" ranges (cooking).

J. S. Fry and Sons, Limited, Union-street, Bristol—Pure concentrated cocoa.

W. C. Gibson and Co., Limited, Exchange-buildings, Queen-street, Newcastle-upon-Tyne—White enamelled fireclay sinks.

George Henry Hall, Thornton-street, Newcastle-upon-Tyne—Ambulance van.

William Harriman and Co., Limited, Fenkle-street, Newcastle-upon-Tyne—White-glazed sinks.

The Hedworth Barium Company, 1, St. Nicholas-buildings, Newcastle-upon-Tyne—The St. Bede disinfectant.

George J. Hutchings, 4, Clerkenwell-road, London, E.C.—Hutchings' steam cookers.

The Leeds Steel Works, Limited, Hunslet, Leeds—Girder flange bar.

Shanks and Co., Tubal Works, Barrhead, N.B.—Shanks' "modern" bath.

The Smokeless Fire Co., Limited, 100, Shaftesbury Avenue, London, W.—Smoke consuming cooking range.

Henry Walker and Son, Limited, Westgate-street, Newcastle-upon-Tyne—Bowes' well fire.

Henry Walker and Son, Limited, Westgate-street, Newcastle-upon-Tyne—New ventilator and draught regulator attached to Eagle range.

#### EXHIBITS SELECTED FOR PRACTICAL TRIAL.

British Electrozone Corporation, Limited, Trafalgar-buildings, Charing Cross, London, W.C.—Electrozone preparations.

Richard Clarke and Co., Beehive Mills, Heckmondwike—"Eureka" lead encased block tin water pipe.

Crosier, Stephens and Co., 58 and 60, Collingwood-street, Newcastle-upon-Tyne—Judge's valve, for preventing the waste of water.

J. Defries and Sons, Limited, 147, Houndsditch, London, E.C.—Differential gas regulator.

J. Duckett and Son, Blannel-street, Burnley, Lancashire—Ten gallon underground tipper.

J. Duckett and Son, Limited, Blannel-road, Burnley, Lancashire—Twenty gallon automatic flushing tank.

Emley and Sons, Limited, Westgate-road, Newcastle—Incandescent (Welsbach) gaslight and fittings.

Jeyes Sanitary Compounds Co., Limited, 64, Cannon-street, London, E.C.—Jeyes' preparations.

Jeyes Sanitary Compounds Co., Limited, 64, Cannon-street, London, E.C.—Jeyes' fluid.

John Jones, 40, Sydney-street, Chelsea, London, S.W.—Ball valves.

The Killgerm Company, Limited, Cleckheaton—Killgerm Company's preparations.

The Killgerm Company, Limited, Cleckheaton—Killgerm fluid.

Lever Bros., Limited, Port Sunlight, Birkenhead—Lifebuoy royal disinfectant soap.

Ness and Co., Darlington—Thymo-cresol disinfecting soap.

Ness and Co., Darlington—Thymo-cresol disinfecting fluid and powder.

The North-Eastern Glazed Brick and Tile Company, Limited, 8, Railway Arches, Westgate-road, Newcastle-upon-Tyne—Opalite.

James Stott and Co., Vernon Works, Oldham—"Stott Thorp" reflex light and ventilating sun burner.

James Stott and Co., Vernon Works, Oldham—The Stott gas governor.

Henry Walker and Son, Limited, Westgate-road, Newcastle—Connel's flue ventilator.

H. Watson and Sons, 37, High-bridge, Newcastle-upon-Tyne—Trott's bib valves.

H. Watson and Sons, 37, High-bridge, Newcastle-upon-Tyne—Judge's self-closing springless water tap.

H. Watson and Sons, 37, High-bridge, Newcastle-upon-Tyne—Lord Kelvin's bib valve.



## WE ARE NOT THE CULPRIT.

Thus writes a contributor to a Continental paper, under the head of "A New Illuminant:"—"M. Henry is a *savant* of the school of higher studies, who has revealed the power of sulphate of zinc to absorb sunlight and give it back in the dark. *Poudre de riz* made with this mineral gives a soft luminosity to a fair young face. A lady cyclist dusted all over with this powder is in herself a lamp on a pitch-dark night. The luminous pigment is not liable to be spoiled by damp, by carbohc acid or by any weak acid. It resists rain if united to some strongly adhesive body. There is a house in the Rue de Longchamps where a windowless set of rooms is lighted with it. The lady of the house receives there her friends at 'five o'clocks.' The apartment seemed bathed in moonlight, the curtains are as if studded with glow worms, the ceiling scintillates. The furniture looks as if rubbed with phosphorus. The play of this light on coloured objects gives one the impression of Aladdin's underground palace. Often they take the rich glowing tones of the topaz, ruby and emerald. This powder does not lose its brilliancy if used in starch or size. A black dress trimmed with lace made luminous by it is more than bewitching."

We do our best to illumine the world, but not in this way, and a room made hideous, vulgar, and inartistic as the Rue de Longchamps one is stated to be would give us the creeps. The person writing about us has evidently been drawing upon a hashish imagination, and his allegations about luminosity are, we fear, like a Somerset House analytical certificate—an ounce of fact, a pennyweight of science per one hundredweight of fiction.

## THE "EVENING STANDARD" ON ITSELF.

LAST week we showed the *Evening Standard* as the apologist of antiseptics. This week it says:—

"It may be granted that the weather during the last few days has been unfavourable for the keeping of meat in a wholesome state. This, however, is insufficient to account for two hundredweight of putrid rabbits and pickled pork having been found in a large provision shop in the London-road by the sanitary inspector of the Vestry of St. George-the-Martyr, in such a state that when brought into the court-yard the stench was described as sickening. Such being the case, it was morally certain that their state must have been patent to the proprietor, or person acting for him in his shop. There can be no doubt, in spite of the efforts of the sanitary inspectors, that a large amount of provisions unfit for human food must be sold every week in certain quarters of London. Quantity and cheapness are more regarded by the very poor than quality, and in the bustle of Saturday evening's shopping no close examination of meat is possible. The customers are of a class that cannot afford to be particular, and having once made a purchase force themselves to eat it rather than throw it away. *It is a wise provision of Nature that putrid meat betrays its state by its smell.* Were it otherwise, we may be sure that the amount passed off upon poor people on Saturday evenings would be vastly greater than it is. It may be, of course, in the present case that the rotten meat and rabbits had been put aside for the purpose of being destroyed, and were not intended to be offered for sale, but the mere fact that they were upon the premises must, unless strong evidence is produced to this effect, be taken as evidence that they were intended for sale."

In the light of its nonsense of a week before in favour of antiseptics, the passage we have italicised is instructive. If "it is a wise provision of Nature that putrid meat betrays its state by its smell," why should the *Evening Standard*, a week earlier, extoll the use of drugs,

the object of which is to mask that smell and baffle "a wise provision of Nature"? Perhaps the *Evening Standard* can explain, or perhaps its scribe did not know what he was writing about. In any case, our contemporary is on the horns of a dilemma.

## SUSPICIOUS POISONING CASE AT BRADFORD.

"QUAKER OATS" AND CREAM.

A STRANGE case of poisoning was notified on Sept. 10 to the Bradford Medical Officer of Health (Dr. Evans). On Sept. 7, Mr. W. Parkinson, coal merchant, of Fern Lea, Daisy Hill, and three members of his family were seized with illness after partaking of porridge made from oats and cream. Dr. Herbert White and Dr. McNab were summoned, and found the patients suffering from symptoms of poisoning. The porridge eaten by Mr. Parkinson and his family was made from "Quaker Oats," which have since been subjected to chemical analysis and bacteriological examination, and no trace of poison has been discovered. Efforts to discover some other cause for the illness have, however, been made in vain, and the medical authorities are still of opinion that the original supposition must be correct. As to the part which Quaker oats bore in the matter the American Cereal Company, who prepare these oats for sale, have been at considerable trouble to apply a test, which has produced the following testimony from Dr. H. W. White:—

"Gentlemen,—In reference to your inquiries regarding the case of poisoning at Chellow Dean on the night of September, the cause of which was supposed to be from eating 'Quaker oats' and cream, I beg to state that I immediately took possession of samples of each, and without delay fed some cats on the suspected Quaker oats and others on the suspected cream. The cats fed on the oats remained perfectly well, but in every instance the cats fed on the cream became apparently ill, and exhibited all the signs of irritant poisoning. Again, whilst those of the family affected had similar quantities of 'Quaker oats,' they had very varying quantities of the cream, and it was observed that those who took most of the cream suffered in the greatest degree. It is, therefore, my emphatic opinion that the cream and the cream only was the sole cause of the irritant poisoning.

"HERBERT W. WHITE, L.R.C.P.

"Medical Officer to the No. 1 District, Bradford Union.

"To the American Cereal Company."

The case is, therefore, like the birth of Thackeray's hero Jeames, "wropped in mystery."

## IMPORTANT TO MARKET GARDENERS.

AT Brentford, on Sept. 17, Alfred Reffel, market gardener and salesman, carrying on business at the Brentford Market, Kew Bridge, and elsewhere, appeared to an adjourned summons, taken out at the instance of Mr. Walter Tyler, the inspector under the Food and Drugs Act for West Middlesex, charging him with having in his possession an unstamped measure. Mr. Stephen Woodbridge appeared for the inspector, and Mr. Biron, barrister, defended. Mr. Woodbridge said that the defendant was summoned under the 28th Section of the Act, which provided that all "measures of capacity shall be stamped." The prosecution did not contend that every basket used by market gardeners should be stamped, but that every salesman should have at least one standard and stamped measure in his possession. In the present case a man named Mason purchased a quantity of peas of the defendant, and asked for a "bushel of peas." He was allowed to take his choice of a number of baskets filled



with peas, and for one of these he paid 2s. He purchased it on the understanding that it was a bushel of peas, but did not ask for it to be measured, nor was he dissatisfied in any way. The basket was unstamped, and when this fact was pointed out to the defendant's salesman, the man replied that there was no necessity to stamp it. The manager was told by the inspector to get the measure stamped; but, as no action was taken by the man, the present summons was issued against the defendant. If the defendant would promise to always keep a stamped bushel measure in his possession, the prosecution would withdraw the summons. Mr. Biron, for the defence, contended that the basket was not a measure within the meaning of the Act, but was simply a basket, which possessed several names amongst traders, and was generally known as a "sieve" or a "bushel." After further argument and some evidence, the Bench gave it as their opinion that the basket in the present instance was a measure, and, therefore, it should have been stamped. Defendant would be fined 20s. and have to pay £3 10s. costs, and the Bench would be pleased to grant a case.

### THE DEADLIEST FOE OF THE OYSTER.

Most persons would have thought the answer to this conundrum would be Mr. Ernest Hart and a few imitating fussy faddists, but this is not the case according to a person owning the name of Dr. Paulus Schiemenz. He says:—

"The most active enemy of the oyster is the starfish. At first sight it might not appear easy for the starfish to force open the tightly-clenched shell of a living oyster. The operation requires some skill on the part of those who can wield an oyster knife. The tactics of the starfish, in fact, were long a mystery to men of science. Dr. Paulus Schiemenz now undertakes to enlighten us on the subject in the pages of the journal of the Marine Biological Association. It has been surmised that the starfish lays siege to the oyster and starves him into surrender, or again that it kills the oyster with some poison that it has the power of secreting. Neither supposition, says Dr. Schiemenz, is correct. The starfish, as he has demonstrated by experiment, opens the shell by sheer force persistently applied. This it does by an ingenious system of leverage that forms a curious study in mechanics."

### MILK IN NORTH LONDON.

JOHN JAMES, dairyman, of 166, Mare-street, was summoned before Mr. Paul Taylor for selling milk adulterated with 13 per cent. of added water.—The Hackney Vestry prosecuted by their inspector under the Food and Drugs Act (Samuel Punter). The analyst's certificate was put in in proof of the allegation, and the defendant somewhat excitedly asked why the sample bottle which he had had burst, and that which the inspector had had remained intact?—The defendant also expressed surprise at the prosecution, because he had had many a drink with the inspector.—The inspector added that since this sample was taken the defendant came to him at the Town Hall and asked him out to have a drink; and, whilst having this drink, the defendant admitted having added a quart of water to a barn gallon.—The defendant: Bring your witnesses that I said anything of the kind.—Mr. Paul Taylor: Apart from that admission, here is the certificate that the milk contained 13 per cent. of added water.—The defendant called a witness to say that no water was added to the milk from which this sample was taken—at any rate, to his knowledge; and he called a witness who acted in his absence to say that the milk had not been tampered with.—Mr. Paul Taylor said there was no defence to such a case except a warranty from the

original dealer. The defendant would pay 20s. fine, and 12s. 6d. costs.

SAMUEL WEBB, of Broadway, London Fields (whose family were said to have been in business as dairymen in Hackney for more than 100 years), was summoned for selling milk adulterated with 20 per cent. of added water. Mr. C. V. Young defended, and said there had been a mistake. The child whom the inspector had sent was served with "separated" milk, which was sold at 3d. a quart; and the defendant's servant was handing the child the halfpenny change out of the 2d. she tendered, when the inspector entered the shop to take the sample. The inspector denied this, and added that the assistant had taken the 2d. and turned to go into the back premises when he entered. Mr. Paul Taylor said he could not accept the defence. Mr. Young—At least you can accept the previous integrity of the defendant, and in this case the separated and scalded milk was served instead of the pure milk. Mr. Paul Taylor inflicted a fine of 40s., and 12s. 6d. costs.

WILLIAM JARVIS, of Durham-road, Finsbury Park, chief of the Callow Park Dairy Company, was summoned for selling milk adulterated with 5 per cent. of added water.—The Inspector proved the purchase of the sample in the street from a man named Fletcher attached to the Wall-street, Ball's-pond, dépôt.—Mr. Paul Taylor asked the inspector if he considered it safe to prosecute on a certificate showing 5 per cent.?—The Inspector: I am acting on my instructions.—Mr. Paul Taylor: I shall dismiss the summons.

MRS. DUNCOMBE, a shopkeeper, of North-street, Hackney, was summoned for selling milk to which 14 per cent. of water had been added.—The Inspector produced the analyst's certificate, and the defendant replied that she sold the milk in exactly the same condition as she got it from the wholesale dealer.—Mr. Paul Taylor said that retailers of milk ought to be careful to protect themselves by getting a guarantee of purity with every consignment of milk, and then they would have a defence to any prosecution of the kind. As it was he was bound to convict.—Fined 5s., and 12s. 6d. costs.

### MEAT.

EMILY PUDGE, butcher, Sparkbrook, was summoned at Birmingham, on September 11th, for having fifty-four pieces of beef exposed for sale unfit for human food. The pieces of meat were in pickle, and smelled most offensively. A specialist who was called said that the meat was decomposed, and almost in a pulp. The bench fined the defendant £2, and said she was liable to be fined £1,000.

At Southwark, on September 14, the magistrate inspected a large quantity of putrid rabbits and pickled pork, weighing about 2 cwt., which had that morning been seized at a large provision shop in the London-road, by Mr. Anscombe, sanitary inspector to the Vestry of St. George-the-Martyr.—The articles were brought into the court-yard in a hand-cart, covered with sacks, and the stench which they emitted was sickening.—Mr. Fenwick, having heard the inspector's statement that some of the goods were exposed for sale and some were deposited in the pickling tubs, ordered the immediate destruction of the lot, comprising 56 rabbits and 12 pieces of pork, and granted two summonses against the shopkeeper, one for exposing for sale and the other for depositing the goods for the purpose of sale.

At Clerkenwell Police-court, on September 9, Daniel Stiff, of Ironmonger-row, and Thomas Hornsey, of Whitecross-street, were prosecuted at the instance of St. Luke's Vestry, by Sanitary-Inspector Adams, for being in possession of four hind-quarters of beef, diseased with tuberculosis, and unfit for human food.



The stuff, which was said to have cost 1s. per stone, was condemned by Dr. Yarrow.—Mr. Fenwick fined each defendant £5, and 2s. costs.

#### BUTTER.

AT St. Helens, on Sept. 14, George Irwin, provision dealer, of Albert-street, St. Helens, was fined 20s. and costs for selling 1lb. of butter to Police-sergeant Kerrigan which, according to the analyst, contained 84 per cent. of fat other than butter fat.—Mrs Mary Ann Ewins, also of Albert-street, was fined 5s. and 4s. 6d. costs for a similar offence, the sample containing 15 per cent. of fat other than butter fat.

#### TINNED FOOD POISONING—A GOOD SUGGESTION.

THE Liverpool Health Committee have discussed the case which recently occurred in Liverpool of fatal poisoning by tinned salmon. Dr. Bligh thought that the mischief was done by air getting into the tins during packing. Mr. Taggart asked if the Committee could not frame a regulation which would compel vendors to put on the tins a direction that the fish should be turned out as soon as the tin was opened. The Chairman replied that they had no power.

We suppose we shall have a new Food and Drugs Act, and the need for such often proved necessary declarations *re* tinned foods must not be lost sight of.

#### RUM AND WATER.

ROBERT BRADLEY, Swan and Salmon Inn, Alfreton. was charged on September 11 with having sold half a pint of rum which was found to be adulterated with 28 parts of water.—Colonel Shortt said it was one of the worst cases he had experienced. When rum was reduced 25 degrees under proof it ceased to be rum. In this case there was 28 degrees of water added, and it was 46 degrees under proof.—Penalty, 20s., costs 18s. 6d.

#### THE CHADWICK SANITARY SHIELD.

THE trustees under the will of the late Sir Edwin Chadwick announce that in January, 1899, they propose to give a shield worth £100, to be called the "Chadwick Shield," to that local sanitary authority presiding over a population of not less than 50,000 persons, which, having adopted the most complete application of the separate system of drainage, shall, during the preceding five years, show the best reduction of the death-rate in its district.

#### WHO ADULTERATED THE MILK?

THOMAS and WILLIAM ADCOCK, farmers, of Great Packington, were summoned at Handsworth, on Sept. 11, for unlawfully selling milk to which 12 per cent. of water had been added, to Henry Thomas Barnett, milk salesman, of Coleshill-street, Birmingham.—Mr. Ashford, who appeared on behalf of the prosecution, explained that in the first place the man Barnett had been summoned for selling the milk, which had been proved by the public analyst to contain 12 per cent. of added water. Barnett, however, then proved that he had bought the milk from the present defendants through an agent, and had a written guarantee from the defendants certifying it to be absolutely pure. In consequence the two defendants had been summoned. It seems that on August 6, as usual, a churn containing 12 gallons of milk was forwarded by the defendants from Hampton-in-Arden Station to Perry Barr for the salesman Barnett. Attached to it was a label guaranteeing it to be genuine. Barnett called for it as usual, and started on his round. He had not gone far when an inspector of nuisances took a sample of the milk, which was after-

wards certified to be adulterated. Barnett gave evidence to prove that he did not tamper with the milk in any way after he received it at Perry Barr Station, and his statement was borne out by a boy who was with him on the morning in question.—Mr. Ansell remarked that unless he got a conviction upon the present defendants he should have to proceed again against Barnett. Defendants were responsible for the milk until it was delivered to Barnett at Perry Barr, as they paid the carriage, at their own risk.—Defendants protested strongly that the milk was perfectly pure when it left their hands. They both helped to milk the cows that morning, and William himself conveyed it to Hampton Railway station. Samples could be taken from their milk any morning before it left Hampton Station, but although they knew they were responsible for it until it was handed over to the retailers, they could not superintend it further.—The Bench remarked that it was a hard case. They thoroughly believed the defendants, and did not for a moment think that the milk had been adulterated before it left Hampton Station. Unfortunately, however, the defendants were liable for it between there and Perry Barr. They should inflict as small a penalty as possible. Defendants would each be fined 2s. and costs (£1 11s. in all).

#### FOOD ADULTERATION IN ST. OLAVE.

AT Southwark Police Court, on September 10, Mr. Rogers, of Darwin-street, Old Kent-road, was summoned before Mr. Slade for selling milk from which butter fat had been extracted to the extent of 90 per cent.—William Johnson said he saw a boy employed by defendant selling milk at Vine-street Buildings, Tooley-street, on Sunday morning, August 16. Witness asked the boy to serve him with a pint of milk, for which he paid 1d. It was handed to Mr. Ashdown, who was near by.—Thomas Ashdown, an inspector under the Food and Drugs Act, employed by St. Olave's Board of Works, said he received the milk from the last witness, and informed the boy that it would be analysed. Defendant then came up and said it was skimmed milk. On being analysed it was found that 90 per cent. of butter fat had been abstracted. Questioned by the magistrate, witness said that on the morning in question pure new milk was sold for 3d. the quart. Defendant stated he had done all he possibly could to comply with the Act. He had the words "Pure separated milk" painted on his barrow, in three-inch letters, and he had sent a bill—one of which he produced—to every customer, which stated that the milk he sold at 2d. per quart was pure skimmed milk. He had also told his boy to inform the customers the milk was skimmed. Mr. Slade: But the boy did not inform the witness who purchased this milk of the fact. Defendant was fined 40s. and 12s. 6d. costs. Defendant: May I have time to pay? Mr. Slade: Yes, a week. Defendant: I should like a fortnight. Mr. Slade: Very well.

WILLIAM ALLEN, of Barnham-street Stores, Tooley-street, was summoned before Mr. Slade for exposing for sale margarine which did not bear a label. Mr. Philcox defended. Thomas Ashdown, inspector, stated that on August 19 he went into defendant's stores and, pointing to what appeared to be butter lying on a slab, asked for half a pound. He was informed it was margarine. There was no label on it, a fact to which he called the shopman's attention. Cross-examined, witness stated that the margarine could be seen from the centre of the shop. He did not have to go to the end of the counter and lean over in order to see it. John Buckley, the manager of the shop, was called for the defence, and stated that no one could see the margarine on the slab from any part of the shop, except by leaning over or going behind the counter. He told the inspector this, and that it did not need a label. James Blaye stated that he was in



the shop on the day in question, but was unable to see the margarine without leaning over the counter. Defendant said the margarine had been kept in the same place for 2½ years without being labelled. It could not be seen without leaning over or going behind the counter. Mr. Slade adjourned the summons.

ARTHUR GEORGE BURGESS, of 11, Curlew-street, Horselydown, was also summoned for exposing margarine for sale not bearing a label. The defence was that the margarine was contained in a pan, on which it was impossible to affix a label; but on a shelf just above seven labels were fixed, bearing the word "Margarine." Fined 10s. and 12s. 6d. costs.

### THE TRUTH ABOUT THE ORIGIN OF THE ADULTERATION ACTS.

THE work of Professor Postgate in bringing into operation a measure to suppress adulteration has been ignored so persistently that a timely reminder in the *Birmingham Gazette*, of September 15, was needed. Mr. W. S. Scott writes:—

I have no wish to underrate the statements of your correspondent, Mr. Arthur J. Giles, secretary of the Grocers' Federation, in to-day's *Gazette*, if he can show that the grocers of Birmingham took an active part in furtherance of this measure (the Adulteration Acts) with the late Mr. Muntz, but I fancy those who believe in necromancy will think the ancients will look upon the statement with a smile. So far as facts run, the Bill had lain in a printed form on the shelf of the study of the late Professor Postgate for a long time, and none of the Birmingham M.P.'s would touch it after the death of Mr. Scholefield, who carried the first division some years previously; but, on the contrary, *Mr. Bright spoke strongly against it*. When, however, Mr. Muntz became third M.P., a small deputation of interested persons—viz., Dr. Postgate, the compiler of the measure, the late Robt. Dexter, Daniel Foster, Joseph Smith, Samuel Ward, and myself—met Mr. Muntz by appointment at his office in Great Charles-street. When Dr. Postgate had read the Bill and explained its objects, Mr. Muntz, with his characteristic physical enthusiasm, sprang to his feet, flourished the Bill in his hand, and exclaimed: "I'll take the Bill to Parliament, gentlemen, and I'll show what Birmingham can do." He did take the Bill, and very soon convinced the Government that it was their duty to pass it into law. This measure has long been admitted to be of benefit to the country, and I am convinced the sole credit of its origin and composition was due to the late Professor Postgate, of Birmingham, and a few devoted colleagues above named. And I hold that justice has never been done by the country to the late Professor Postgate or those associated with him. Perhaps the next generation may look differently on the matter.—Yours truly,

Bell-street, September 4.

W. S. SCOTT.

We are quite of Mr. Scott's opinion. It is rarely that men of originality get any credit for their work. The political "bounder" usually condescends to be "coached," "stuffed," and use the brains of men of initiative, and poses as the tin god on brass wheels who has done it all.

### PLUMSTEAD AND ADULTERATION.

THE result of the analyses of between 30 and 40 articles of food was that all were found to be genuine, with the exception of a sample of milk adulterated with 25 per cent. of added water. A summons with respect to this has been issued.

### COLMAN'S MUSTARD.

AT Alfreton Petty Sessions, on September 11, Elijah Smith, grocer, Clay Cross, was charged by Colonel Shortt with having sold ¼ lb. of mustard which was not of the quality described, being adulterated with 10 per cent. of wheat starch and a small quantity of turmeric.—Colonel Shortt said that the price paid was that paid for good mustard.—Defendant, at the time, showed the

tin from which it was taken, saying that if the mustard was not pure it was not his fault. It was Colman's mustard, and the defendant's wife said she bought it at Chandler's, Chesterfield, and she did not know before then that there was such a thing as adulterated mustard.—Fined 2s. 6d., and costs 20s. 6d.

### FLINT COUNTY COUNCIL AND THE ADULTERATION OF MILK.

ON the report of the General Purposes Committee being presented for adoption, Dr. H. Williams referred to the fact that at a conference recently held of Sanitary authorities it was decided to ask that the Somerset House standard for milk should be raised, and yet they could not get the Flintshire magistrates to convict persons who were found to have extracted cream on the present low standard.

### NOVEL REMEDY FOR POST-PARTUM HÆMORRHAGE.

I WAS called to a severe case which had been attended by an up-to-date nineteenth-century midwife. The treatment she had adopted prior to my arrival was a *spoonful of the patient's blood* (which had escaped per vaginam) in a glass of water every half-hour. This midwife does an immense practice—chiefly "without the doctor."—Joseph Beeston, in *Australasian Medical Gazette*.

### A BORAX COMBINE.

F. M. SMITH, who owns all the borax beds in California and Nevada, and is heavily interested in street railways on the Pacific slope, is quoted by the *Pharmaceutical Digest*, of Portland, Ore., as saying:—

"My European deal involves the organisation of a company in England that will absorb an English chemical company and a very large portion of the output of our California borax mines. This English company will then put California borax on the European market, and will enter into competition with the borax that finds its way there from various parts of the world. We will build a large refinery, probably at Liverpool, to which the raw borax will be shipped from California, where it will be refined for the market there. I will hold the control of it, and it will be managed right here and will have its headquarters on this Coast, so that it will be in reality a California institution, though organised to handle a foreign trade. This is something that I have been trying for some years, and I have at last accomplished it. The deal involves something over \$2,000,000. The organisation is not yet complete in all its minor details, but it has been accomplished so that it is now an assured fact. This will at once double, and in a very short time treble the output of California borax in its raw state, though it will not have any great or immediate effect upon our works on Alameda Point."

### WICKED WASTE.

DR. HERBERT JONES's paper on the treatment of house refuse by sulphuric acid is of interest to the agriculturist as well as to the sanitarian. What would in the ordinary way become sewage is treated with weak sulphuric acid absorbed in fine ashes, the volatile ammonium sulphate is fixed by conversion into sulphate, and there results a more or less highly nitrogenous manure which can be sold at about eighteen pence a ton. Practical experiments with this substance have proved it to be a valuable fertiliser. In a disused piggery with a brick floor there was prepared a bed consisting of a thin layer of sods, about three inches of manure, and a thin covering of soil. In this bed 50 tomato plants were placed; and they are now "sturdy plants covered with



fruit." Two pieces of very rough clay land, with which nothing could be done, were treated with liberal dressings of the manure, with the result that a beautiful crop of clover was grown on one piece, whilst the other was converted into excellent grass land, letting for £4 10s. an acre. The Crewe system would certainly seem to be admirably adapted to the needs of the overgrown villages of the north, where there is little or no water carriage; and it is to be hoped that the local authorities will not lose sight of it. Even where there is water carriage, the system might advantageously be tried; for, as Mr. May remarked, to wash the refuse away is simply "a wicked waste of good material."—*Newcastle Daily Chronicle*.

### THE "CLIVE" SCANDAL.

It will be lastingly discreditable to the Government if the results of an inquiry instituted regarding the overcrowding of the Indian Marine troopship "Clive," last spring, are not laid before Parliament at its next meeting. The tale of how the tinned provisions were constantly found bad and thrown overboard, how the bread had to be condemned and biscuit substituted, suggests maladministration that should be brought home to someone, but scarcely ill-treatment to the soldier. If the bad tinned meats had been served out, and if the sour bread had not been replaced by biscuit, then there would have been something to complain about. As long as the bad rations were condemned and cast overboard, it would seem that the diet grievance must have been a trifle to the sufferings produced by the overcrowding, whose effects must have been greatly aggravated by the number of invalids on board. Morally and physically, there is something very revolting in the idea of having the sick packed up with the sound in such a press as that which prevailed on board the "Clive," remembering the loathsome class of disease from which a great part of the invalids were suffering. This clearly refers to venereal of all types.

### ADULTERATION IN GLAMORGAN.

THE report of the county analyst showed that since his last report 242 samples of food articles, etc., had been submitted to him for analysis, of which 117 were samples of milk, and of these samples only about 10 per cent. were found to be adulterated, but some of the latter were adulterated to a considerable extent. As regarded the quality, the milk from the Barry district stood the highest, and that in the Pontypridd district the lowest. One sample of butter examined by him contained borax; of two samples of honey one was grossly adulterated. He believed that spurious honey was by no means uncommon, and such adulteration should be strongly condemned on medical grounds; one sample sold as beeswax consisted entirely of resin and petroleum. In his opinion, the bee had very little to do with the production of the so-called honey and beeswax sold in the district. Brandy was sold  $34\frac{1}{2}$  degrees below proof, gin  $37\frac{3}{4}$ , rum  $46\frac{1}{4}$ , and whisky 43 degrees under proof. Of the total number of samples submitted to him, about 12 per cent. was adulterated. In the Pontypridd district honey was adulterated with 50 per cent. of dextrose, or starch sugar. Tea and coffee were generally unadulterated, but cocoa was adulterated with starch and sugar.—The report was adopted, and orders made for proceedings to be taken by the police in the worst cases.

### THE STATE OF DUNDEE MILK.

A MEETING of the Sanitary Committee of the Dundee Town Council was held on September 8th, when G. D. Macdougald, the city analyst, submitted his report for the quarter ending 15th August, 1896. It appeared from this that he had examined 55 samples of milk

under the Sale of Food and Drugs Act. Of these 28 had been found genuine, 23 showed traces of having been adulterated with water, and 4 were really specimens of skimmed milk. Two samples of butter were also analysed, and found genuine.

### WOMAN AS AN ARTICLE OF FOOD.

"PARTICULARLY NUTRITIOUS AND EASILY DIGESTED."

A DALZIEL's telegram from Paris says that a curious statement of the advantages of cannibalism was made at a meeting of the Parisian Ethnographical Society on Saturday. During a discussion upon cannibalism, one of the members, M. Parant, in extolling the merits of meat, said that no more nourishing food could be obtained than meat if it were only chosen with care. In this connection it was a remarkable fact that according to the unanimous testimony of explorers, the natives who enjoyed the most robust health and could endure physical fatigue better than others, were those who lived principally on human flesh. The flesh of women was particularly nutritious, and was the most easily digested of all. Several other members corroborated these assertions, agreeing that as a strengthening article of food human flesh is unsurpassed.

### CORRESPONDENCE.

#### SNAILS IN BEER.

To the Editor of FOOD AND SANITATION.

SIR,—I have been advised to submit the following to you for your advice. A short time ago I purchased some bottled stout from a neighbouring off-license house, and on opening one and handing my wife a glass with her supper, she had no sooner touched it than a large snail was on her lips, the result of which (not being in exceptional health at the time) so upset her that the vomiting that followed caused her to be downright ill and me expense by sending her away. Well, sir, the retailer refuses to recognise any liability (I took the stuff back at once and showed it to him), and so I would like to have it analysed and tested to see if I can hold him responsible.

Your advice I shall eagerly look forward to, as you may be able to recommend me one, and also to advise me regarding the cost. Trusting, sir, you will see your way clear to assist me, believe me, yours, etc.,

J. W. B.

Sept. 8, 1896.

["J. W. B." would, we believe, be only wasting money in having the stout analysed and bringing an action against the retailer. It often happens that dark bottles, such as are commonly used for stout and stone ginger beer bottles, are imperfectly washed, but we doubt if the retailer who is not himself the bottler could be held responsible for this. Some time ago a person was poisoned by an accidental admixture of oxalic acid in beer, and we believe an action for damages was unsuccessful. "J. W. B." might take legal advice on the subject, but we are of opinion he would be only throwing good money after bad. The retailer could make many defences: the snail could not possibly have been in the liquid itself; that he was not responsible, having sold the stout in good faith as obtained from the bottlers; that the snail was in the glass into which the beverage was poured; that a snail is not injurious to health, as many thousands of persons eat snails and consider them great delicacies, etc., etc.; so that altogether we do not think "J. W. B." would find the game worth the candle.—ED. F. AND S.]

AS HE PRONOUNCED IT.—"How do you pronounce the last syllable of that word 'butterine'?" asked the customer.

"The last syllable is silent," stiffly replied the grocer's clerk.



To the Grocers, Provision Merchants, Pastry-Cooks, Confectioners, and  
the Public of the United Kingdom.



# "LE DANSK"

## MARGARINE.

A Perfect, Pure, and Wholesome Butter Substitute, for Table use  
and every description of Pastry. In Colour, Flavour, and Texture,  
equal to Best Brands of Butter, costing one-third less. This unique product stands far above  
other makes, and has received honour everywhere. Has the largest sale in the world!

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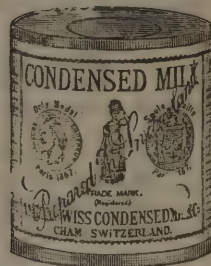
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## Food and Sanitation.

SATURDAY, SEPTEMBER 26TH, 1896.

### EFFORTS TO SUPPRESS YEAST ADULTERATION.

It will be news to makers of pure yeast that "such a thing as pure yeast is unknown;" but a person of the name of Potts says so, whatever sort the Potts may be—cracked or otherwise. When Mr. Justice Hawkins gave his lamentable, appalling, and wholly incomprehensible decision anent baking powder we said the German-yeast-plus-potato-rogues-of-manufacturers would accept his lordship's plain invitation to plunder the British public. Our forebodings were realised long ago, but it is only during the past fortnight that the sale of potato as yeast came before the police courts. Stockport led off.

Mr. Thomas Wild, grocer, Bredbury, being charged with having sold "a certain article of food, to wit, yeast," adulterated with starch, a Mr. Potts, for the defence, raised the objection that yeast was not an article of food, and cited a case in which Justices Hawkins and Kennedy had decided that the "Excelsior" baking powder was not an article of food. Yeast was used, argued Mr. Potts, for exactly the same purpose as baking powder, and was therefore governed by the case quoted. Another objection taken by Mr. Potts was that starch in yeast was not an adulterant; it was a common practice to mix starch with yeast as a preservative. There was a further objection; the analyst had merely certified 95 per cent. of yeast and 5 per cent. of starch, but it was laid down in *Fortune v. Hanson* that it must be a quantitative analysis. *Such a thing as pure yeast was unknown.* He further contended that starch was not injurious to health.—The magistrates dismissed the case on the technical points raised, without calling any evidence as to the facts.

The Pontypridd Stipendiary is not so easy-going as the Stockport magistrates. He wants to know before he decides, and when, on September 16th, Herbert Insole, Trelaw, Rhondda Valley, was charged with selling adulterated yeast, and Superintendent Evan Jones said that he had visited defendant's shop and purchased two ounces of German yeast, for which he paid 2d., the Stipendiary thought he would like to know what yeast was. The county analyst certified that the sample was composed of 20.6 dry yeasty substance, water 65.4, and potato starch 14 per cent. Pure yeast contained no starch, and should contain about 26 per cent. of dry yeasty substance. In this case, added witness, the legitimate substances were decreased by the addition of 20 per cent. of starch. The Stipendiary said there was a difficulty about the case, in respect of its not being food. There was the baking-powder prosecution. The Superintendent said that the High Court had decided that salt, pepper, and mustard came under the category covered by the Food and Drugs Act, and he submitted, with much deference to the learned magistrate, that this article would come into the same class.—The Stipendiary: How am I to know that a small portion of starch is not a proper ingredient of German yeast?—The Superintendent: The certificate proves that, sir.—The Stipendiary: Oh, I don't know if it is good enough for that. It is only good to prove the component parts. I don't know what German yeast is—what its component parts are. It seems to me it is a compound. As defendant is not here, we had better adjourn the case for four weeks. We will see what you make of it.—The Superintendent said that he would be able to call the county analyst on the matter to give evidence.—The Stipendiary: To prove what is the true definition of German yeast—at present we are all in the dark as to what it is.

At Schiedam, the centre of yeast manufacture, the makers of what is known as "German yeast" had, until two years ago, and doubtless have now, an association of yeast manufacturers, to which the most important firms in the industry belonged. From every manufactured lot of yeast there was, prior to its leaving Schiedam for shipment to England, a sample taken and sent to the offices of the Yeast Union, where it was examined by an expert, appointed by the yeast manufacturers, and if any potato-starch were found in any of the samples the offender was first warned, next fined, and, if the fraud were persisted in, expelled from the society of honest manufacturers. So much for the statement that "such a thing as pure yeast is unknown." Having witnessed its manufacture and the efforts made by the honest Schiedam makers to prevent rogues adulterating it with potato-starch, we think a little truth about the subject may be opportune. As to yeast not being an article of food, that is rather a tall statement, for yeast contains a considerable amount of nutriment, and the fact that Justices Hawkins and Kennedy are responsible for a judgment anent baking powder which



set their brother judges in roars of laughter, does not legalise the masquerading of potato as yeast. If anyone doubts yeast being a food we should advise him to allow a bag of it to putrefy, when he will find its odour very similar to that of putrefactive animal matter. A useful article of food could easily be produced from what is now a wasted product in many breweries.

#### SOME POINTS AND A MORAL ABOUT THE SAUSAGE SEASON.

THE sausage season has now opened, and concurrently with its opening we have a batch of cases proving the need for better regulation of the system under which their manufacture is carried on. More stringent regulations would be welcomed, we believe, by a great number of the makers, for their business must materially suffer at times from the wrongdoing of traders who deliberately use unsound meat for sausages, and this from a commonsense view, because, apart from its bearings upon health, the use of "slink" and diseased meat enables an unscrupulous maker to reap a large profit by underselling the conscientious one who uses materials of undoubted good quality. The sausage has been very aptly called a "bag of mystery" for it may contain much meat, or very little; it may be mostly bread rubbish and flavouring, or it may be made from excellent materials and be good and appetising value for the money expended. We illustrated the extent of variation a few weeks ago when we mentioned the analyses recently made by Dr. John Clark, Glasgow, City Analyst, of six samples of sausages as follows:—

| Cost per lb. | 6d.   | 7d.   | 8d.   | 8d.   | 10d.  | 10d.  |
|--------------|-------|-------|-------|-------|-------|-------|
|              | No. 1 | No. 2 | No. 3 | No. 4 | No. 5 | No. 6 |
|              | Per   | Per   | Per   | Per   | Per   | Per   |
|              | Cent. | Cent. | Cent. | Cent. | Cent. | Cent. |
| Fat Pork -   | 30.5  | 38.5  | 28.5  | 23.0  | 47.0  | 45.5  |
| Lean do. -   | 36.0  | 35.5  | 59.0  | 43.0  | 42.0  | 44.0  |
| Bread -      | 18.5  | 12.5  | 6.5   | 16.0  | 2.5   | 1.0   |
| Water -      | 15.0  | 14.5  | 6.0   | 18.0  | 8.5   | 9.5   |
|              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

We see here variations in the amount of bread contained in sausages from 18.5 per cent. to one per cent., and of water present from 15 per cent. to nine per cent., so that the public can be deceived very largely as to the proportion of nutrient matter contained in sausages. But this is mainly a question of price, and, as such, it may regulate itself fairly for purchasers.

The questions of quality and wholesomeness are, however, very different, for here the purchaser is quite at the mercy of the maker. The use of Sangster condiments, etc., enable the unscrupulous to work up any meat, however putrid, diseased, and unfit for human consumption into sausages, and the persons who do this run at present very slight risk of discovery. When they are pounced upon, and their abominable practices obtain publicity, there is naturally some portion of the odium attached to the reputable manufacturers, because the public get an idea that the entire trade is conducted in that manner. Our magistrates, who might do a great deal to put down these nefarious practices, seem very often to think the offence a venial one, although it surely is not one for which a money fine can possibly be an adequate punishment, but prosecuting vestries appeal in vain to magistrates to imprison offenders. As an example of these we cite one at West London on September 16:—

Frederick Retzback, a pork butcher, of North-end-road, was summoned at the instance of the Fulham Vestry with respect to the seizure of a large quantity of putrid meat upon his premises.—Mr. Blanco White appeared to prosecute on behalf of the Vestry, and Mr. Haynes defended.—The case was not disputed, Mr. Haynes stating that he did not intend to challenge the

decision of the magistrate who condemned the meat.—It appeared that on the 11th inst. a poor woman named Frances Collins purchased a small piece of pork at the defendant's shop, and on taking it home to cook found that it was in a stinking condition. She returned to the shop, and as she was unable to obtain satisfaction she complained to the sanitary authorities, who made an examination of the premises and found 114 pieces of meat, weighing 742lbs., all in a decomposed and putrid condition, some of them lying near the machine in the sausage factory.—Mr. White said the shop was situated in one of the busiest parts of the parish, and asked the magistrate to mark his sense of the case by sending the defendant to prison.—Mr. Haynes urged on behalf of the defendant that the meat was sold during his absence, and that he had made previous arrangements to have the other carried away as offal.—Mr. Rose said the meat was extremely bad, and imposed penalties amounting to £42.—The money was paid.

The amount of decomposed and putrid meat seized on this occasion would have made over £30 worth of cheap sausages, and there is a far greater traffic in this class of meat than is commonly suspected. Sausage makers can buy it at a nominal price, and as the profits of converting it into sausages are so large what would usually be thought a heavy fine is a mere flea-bite, recouped in a few days or weeks according to the extent of the business. Every honest, practical man in the trade knows this, and deprecates the condition of things that permits its existence. It is very dangerous for the public, as those who had to deal with the simultaneous wholesale poisoning last year at Manchester, Leicester and other places have good cause to know. It is, therefore, only common sense to ask that the manufacture of sausages should be subject to strict supervision. Other countries are not so short sighted as we are in such matters, for they send offenders to prison and compel them to warn the public of their true characters by displaying a record of their crime, conviction and punishment in their shops. We believe that the reputable makers would be glad of regulations for the trade inflicting imprisonment instead of a fine upon persons found in possession of diseased and putrid meat, etc., in sausage making premises, and that the profitable practice of a vile traffic will not be stopped until it be enacted that anyone thus offending shall be compelled to publish his rascality in his shop window; that each sausage maker should be licensed, and that licenses to manufacture should be liable to forfeiture should the holder be convicted of nefarious practices. We do this with liquor sellers, and it has had an undeniably excellent effect upon the character of those engaged in that traffic. We are opposed to coddling legislation and restrictions upon legitimate trading, but what we have pointed out here are admitted evils wherein a *laissez faire* policy is regularly shown by revolting disclosures to be injurious to a useful trade and to the general public, and we think the case for strict regulation of the trade is clearly made out, for the truth, unfortunately, is that those administering the inadequate laws we even now possess give decisions for which it would be difficult to find a particle of excuse. For example, at Aberdeen, on September 15:—

Before Baillies Farquharson and Murray, Peter Fraser, flesher, George-street, was charged with having, on 10th inst., had in his possession eight pieces of beef, weighing in all 53lbs., which were intended as, but were unfit for, human food. It may be remembered that Baillie Farquharson, at Friday's Court, gave an order for the destruction of the beef, on the petition of the sanitary inspector. Fraser pleaded guilty to the charge, and Mr. J. M. A. Wood, solicitor, made a statement on his behalf. There had, he said, been some misunderstanding between Fraser and his servants in regard to the beef. Fraser had received a carcase to dress, and was proceeding to



dress it, when he noticed that it was diseased. He had been feeling unwell that day, and left for home, leaving orders with his servants that the carcase was to be put aside, but this had not been done. Had Fraser been in his ordinary health the offence would never have occurred. He asked the benefit of the First Offenders' Act under these circumstances.—*The Fiscal had rather a different version of the case to put forward. The sanitary officers had condemned the carcase, and it had been represented to them that the offal had been thrown into the dung-pit. On searching in that place for the offal, they, however, failed to find it. Later they found that the offal had been placed in the premises in George-street, for sale. This, the Fiscal contended, had been done for the purpose of deceiving the sanitary officers. The First Offenders' Act did not apply to cases of this kind, and even if it did accused was not in a position to get the benefit of it, as he had previously, in 1889, been in Court for a similar offence.*—Baillie Farquharson said this was a most serious offence that accused had pleaded guilty to, and really one that the public should be protected from. As it seemed that accused would not take a warning, he would have to pay a fine of £3, with 22s. 8d. expenses, or go one month to prison.

Such a penalty for such an offence is farcical.

#### A CURIOUS GINGER CASE.

AT Newport, Salop, Petty Sessions, on September 16th, Messrs. Parton and Hayward, grocers, etc., St. Mary's-street, Newport, were charged by Sergt. Bluck, Wellington, with selling to him (Sergt. Bluck) ground ginger, which was not of the substance and quality of being genuine, and that the ginger contained 75 per cent. of genuine ginger and 25 per cent. of exhausted ginger. Mr. Elliott appeared for the defence, and pleaded not guilty.—George Bluck, a police sergeant stationed at Wellington, said that on Saturday, the 11th July, he visited the defendants' shop in company with P.C. Evans. He called for half-a-pound of ground ginger, and this was supplied by Mr. Parton. After he had been supplied he paid 7½d., the price of the ginger. After the purchase was complete, this defendant was told that they were two police officers, and that the ginger was purchased for the purpose of submitting to the public analyst. He divided the sample into three parts, and sealed them up in the presence of the defendants. The one he left with the defendants, one he detained himself, and the other he handed, on the same date, to Mr. Blunt, public analyst, of Shrewsbury. He produced the analyst's certificate.—Thomas Porter Blunt, analytical chemist, residing at Shrewsbury, said George Bluck handed him a packet of ginger on the 11th of July. It was sealed. He proceeded to analyse it. The result at which he arrived was that it contained not more than 75 per cent. of genuine ginger, and not less than 25 per cent. of exhausted ginger. He gave a certificate to that effect.—Cross-examined by Mr. Elliott: He had been an analyst for 28 years. In all the past years he had received about five or six samples of ground ginger to analyse. The last sample of this kind of ginger sent to him for analysis before this was on May 23, 1896. He did not determine the essential oil of the ginger submitted for analysis, and could not say whether it was normal or not. He did not ascertain the resin. The test he applied for examination was the total ash, the soluble ash, and the cold water extract. He did not place the ginger under a microscope, but he had examined ginger in this way. He tasted the ginger, which was not bad at all, and the aroma and appearance was good, and he had no suspicion from any of the last-mentioned facts that there was anything wrong with the ginger. Ginger lost a lot of strength by keeping in brown paper. The valuable part of the ginger was volatile.—Mr. Elliott, in his address to the Bench, said this case, although it

appeared trivial on paper, was a very serious one, because it laid an imputation on Messrs. Parton and Hayward, who had a character to keep up, and were at the present time looked upon as honourable and honest tradesmen. The allegation also laid a blot upon the character of Wright, Crossly and Co., of Liverpool, who were the manufacturers of the ground ginger. From the canister they would see that the ginger was guaranteed as genuine ground ginger. Messrs. Parton and Hayward, if they had been so advised, might have taken the benefit of the Act, and given notice to the police that they bought with a written guarantee, and then the matter would have been hung up; but Messrs. Parton and Hayward, knowing the respectability of Wright and Co., and this firm, knowing what a serious allegation it was against them, decided to fight the case upon its merits, feeling certain that a mistake had been made by the county analyst, Mr. Blunt. There were two tests by which adulterated ground ginger could be ascertained. The first, and quite the best test, was to subject the ground ginger to a microscopic examination. By the microscopic examination the granules could be seen. Mr. Williams, whom he should call, would tell them that the ginger they had before them was absolutely pure, and that there was no trace whatever of spent ginger in it. Mr. Williams had treated the sample to a chemical examination, in which he differed from Mr. Blunt. Messrs. Wright and Co. had a similar caselast year, which took place at Morecambe, in Lancashire, and there the county analyst was labouring under the same mistake Mr. Blunt had made in this. The magistrates adjourned the case for a month or so, and the third packet was sent to the Somerset House authorities, who pronounced the sample as perfectly pure. The report of the county analyst, in this case at Morecambe, showed exactly the same per cent. of exhaustive ginger as did Mr. Blunt's certificate, and it was exactly the same quality of ginger as this. They were certain a mistake was made by the county analyst. They had sold pure, unadulterated ginger, and they had no hesitation in submitting to any tribunal that took for its test a microscopic examination.—William Hayward deposed to sending the packet of ginger (produced), left by the police sergeant, to Wright, Crossly and Co. He had before sent to them a sample of the ginger from the tin.—Charles William Clarke, a partner in the firm of Wright and Co., said their firm manufactured ginger, and supplied it in the northern parts of the country to six or seven thousand people. They had taken a deal of care in stopping the sale of impure ginger. They gave their customers a guarantee saying the ginger was absolutely genuine, and free from spent. He sent for the sample, viz., packet 3, left by the police, and it was handed to Prof. Campbell Brown and Mr. Collingwood Williams. They (Messrs. Wright) took all responsibility in the matter.—Walter Collingwood Williams, B.Sc., of London University, and a Fellow of the Institute of Chemistry, and other scientific societies, was sworn. He, in conjunction with Professor Campbell Brown, held the office of public analyst of the County of Lancaster, City of Liverpool, and boroughs in Lancashire. He had held the appointment of county analyst of Lancaster for the last ten years. Under the Food and Drugs Act about 2,000 or 3,000 examinations came before himself and Professor Brown yearly. About two or three hundred samples of ginger came before them yearly for analysis. He applied a severe test to the sealed packet of ginger he received to analyse. If he had found 2 per cent. of spent ginger he should have reported it. He gave Wright and Co. a certificate of analysis saying the ginger was genuine—absolutely free from spent ginger. The packet he examined was the one left at Messrs. Parton and Haywards'. He examined the other packet sent by Messrs. Parton and Hayward from the canister, and this he pronounced



identical with packet No. 3. He always found a microscopic examination was the most perfect, simply because a microscopic examination was direct evidence, and the other test was only evidence by inference.—This concluded the evidence, and the magistrates decided to dismiss the case, saying they did not believe the ginger had been adulterated.—Mr. Elliott applied for costs, but this was refused.

#### WHISKY AT ENGLISH HEALTH RESORTS.

AT Blackpool last week some light was thrown on the preparations made for excursionists. Robert Noblett, of the Duke of Cambridge Hotel, North Shore, was summoned for having sold adulterated whisky.—Mr. Butterworth, for the prosecution, stated that Inspector Macdonald visited the Duke of Cambridge and asked for a pint of Irish whisky and a pint of rum. Noblett was informed that the liquors were for analytical purposes, and the samples were forwarded to the County Analyst, whose report stated that the whisky was 53 degrees under proof, and contained 28 degrees excess of water. They were allowed 25 degrees under proof. The rum under analysis proved to be genuine, and other samples since taken also turned out all right. It was just the Irish whisky sample that was wrong.—Inspector Macdonald having given evidence, Mr. Noblett, who appeared on behalf of his brother, pleaded guilty, but added that he broke up the spirits under his father's supervision, in July. Both the rum and whisky were broken up together. His father was hardly in his right mind at the time, as later events had proved.—In view of the sad circumstances connected with the case, the Bench decided to dismiss it.—John Irish, landlord of the Duke of York, was also summoned under the same Act in respect to certain spirits supplied.—Inspector Macdonald spoke to purchasing bottles of rum and Irish whisky, which, on analysis, were found to be—the whisky, 37½ degrees under proof, with 12½ degrees excess of water, and the rum 32½ degrees under proof, with 7½ degrees excess of water. Samples taken on subsequent visits proved to be genuine.—Mr. Blackhurst, for defendant, pleaded that a mistake had been made, and this was supported by John Ackroyd, an employee.—Mr. Irish was fined 5s. and costs in each case, the Chairman remarking that while the Corporation were doing the right thing in bringing these cases before the Bench, there were circumstances connected with that of Noblett which they could not overlook.—Mr. Blackhurst agreed.

#### STOKE NEWINGTON PROPOSES A DUAL APPOINTMENT.

WE hope the Local Government Board will not sanction the following appointment proposed by the Stoke Newington Sanitary Committee.

Dr. Kenwood, the medical officer of the parish, has up to the present carried out the duties of public analyst, though not really appointed to the post, but as the Local Government Board desired that an analyst should be formally appointed, the Sanitary Committee now recommended that Dr. Kenwood be elected to the office at his present remuneration, namely 10s. 6d. per analysis. Mr. Richardson did not think the remuneration was sufficient, and moved that he should be paid a retaining fee of ten guineas a year in addition to the fees for analyses. Mr. Eve said the remuneration now suggested was entirely approved of by Dr. Kenwood. The amendment was not seconded, and the report was accordingly adopted.

Our reasons for expressing this hope is that the two offices have nothing in common. Dr. Kenwood may be an excellent Medical Officer of Health—that is apparently his profession—but if he be the same Dr. Kenwood who is part author of a book entitled *Public Health Laboratory Work*, published by H. K. Lewis, 136, Gower-street, W.C., then the following review, which

we reprint from our issue of May 13, 1893, is instructive:—

"Agriculturists will be surprised to hear, on the authority of Dr. Kenwood, that nitrites of sodium and potassium are now extensively used for artificial manuring. Being, as we are, concerned with the preservation of what remains of English agriculture, lest any of our agricultural readers should use these salts as manure, we would like to inform them that the price of the article is at least £56 per ton, and that wherever nitrites are put as a manure, nothing will ever grow again.

"We are astounded to learn that chalk is frequently added to milk to cover the otherwise evident addition of water. The reports of the Local Government Board, based upon the returns of public analysts, do not make mention of chalk in milk. Thirty years ago, when authors who wanted to be sensational talked about sheeps' brains in milk, they also were very fond of chalk, but surely Dr. Kenwood need not have attempted by claptrap to infuse new life into the old exploded fossil. To do the author full justice, he also states, three pages further on, that chalk is now rarely added. In at least five places elsewhere he confuses alum with alumina, and moreover he calls salicylic acid a salt; but, on the other hand, he, by a rule of thumb method, tries to equalise matters, and terms a fat (beef fat) an acid.

"As to butter, we find it stated, to our sorrow for Dr. Kenwood's pupils, that adulteration of butter with water is of such trivial consequence that there is no necessity to make any effort, as a routine practice, to detect it.

"We trust that we have said enough to warn our readers against this book, inaccurate in its science, and misleading as to its general information. We write also in the interest of the author, lest any wrathful reader, thirsting for information, closing the book more in anger than in sorrow, might proceed to interview Dr. Kenwood at University College, Gower-street, W.C., and the sad scenes which are recorded by Mark Twain when editing an agricultural journal be repeated in Dr. Kenwood's case. Decidedly, with him also 'the pumpkin as a shade tree is a failure.'"

The above shows clearly enough that the two callings of Medical Officer of Health and Public Analyst require an entirely different training. It may be possible for an exceptional genius to be capable in both rôles, but we think the facts above given scarcely warrant Dr. Kenwood in claiming to be such an exception. The plain truth is that such dual appointments are a farce, and contrary to the true interests of both professions. The *British Medical Journal* has condemned them before now, and we look to see it raise its protest once more in this case. Anyway, we have written sufficient to prove that the Local Government Board should veto this appointment.

#### A TAINTED MILK SUPPLY CAUSES FEVER AT ROUNDHAY.

ROUNDHAY, near Leeds, is suffering from an outbreak of scarlet fever, respecting which a resident, Mr. H. M. Forbes, writes:—

Permit me to explain that the source of this grievous outbreak of fever in Roundhay is clearly traceable to a tainted milk supply, and not to any insanitary condition of the district. Can nothing be done to prevent a recurrence of these terrible outbreaks, causing untold mental and physical suffering to all classes of the community? We spend enormous sums of money, and keep an army of policemen to watch over the licensing laws, and punish publicans for selling a glass of beer during prohibited hours; we compel chemists to label poisons and take the addresses of the buyers; yet within three miles of Leeds we permit some milk seller to distribute milk poisoned with the germs of scarlet fever.

Alas! It is only from sad experience that one can learn



what needless suffering is entailed on innocent little children and their parents; but how cruelly hard it must be for the working man and his wife with limited income and scanty accommodation to find their loved ones poisoned with what should be the prime necessity of their existence! We English are too fond of going abroad for our horrors, heroes and heroines. We have them beside us in our "insanitary areas" and overflowing fever hospitals.

Our heroes are our medical men and our heroines are our army of nurses, and our wives and mothers; none the less heroes and heroines because they think they are simply doing their duty. Oh, that some orator would arise and stir up our working men to demand from their representatives unpretentious, *orderly*, domestic legislation, instead of barren sessions and unprofitable talk! In the words of Southey, "Order is the sanity of the mind, the health of the body, the peace of the city, and the security of the State."

But even with this object lesson before them, we doubt, were any person to seek the Parliamentary votes of Roundhayites at the next election upon a policy of sanitation instead of political rot, if he would not be looked upon as a harmless sort of lunatic, and obtain, perhaps, one vote to every thousand recorded for some gaseous political boulder. Dr. Spottiswoode Cameron, medical officer of health, Leeds, promptly sent the following sensible warning to the press:—

"I see from this morning's paper that the cases of scarlet fever at Roundhay are supposed to be due to milk. May I ask your readers who get milk, either directly or indirectly, from that district to protect their children against any possibility of infection in this way by boiling the milk supplied to them as soon as received. There is so much re-selling that the mere fact that the milk used is procured from a dealer in town by no means implies that it has not come indirectly from the suspected farm.—I am, Sir, yours faithfully,

"J. SPOTTISWOODE CAMERON.

"Municipal-buildings, Leeds, September 18, 1896."

#### HOW TO ENSURE PURE MILK.

A MAXSTOKE correspondent last week complained of farmers being prosecuted for adulteration, a complaint which Mr. Robert Edge effectively answers in another column. To those who have studied the question, the good results of taking samples of milk at railway stations, just as the cans come from the farmer, are beyond dispute. High-class dairymen have to be perpetually on their guard against the tampering practised by farmers, and the largest firms are compelled to regularly employ an analyst to prevent their trade repute being injured. The following is a case in point in which a milk vendor was clearly injured. Prosecution of the dairyman, with disgrace and loss of trade, might here have easily occurred, but Mr. Handsley happened to be a practical man not averse to using the law for his protection.

John Bazeley, a farmer, of Fences Farm, Tyingham, Newport Pagnell, was, in consequence, summoned at the Marylebone Police-court, on September 18, at the instance of the St. Pancras Vestry, charged with selling, to the prejudice of the purchaser, milk which was adulterated with 14 per cent. of added water.—Mr. Ricketts, solicitor to the Vestry, prosecuted, and stated that the defendant was under contract to supply pure new milk to a Mr. Handsley, of 110, Clapham-road, who having received several complaints as to the quality of his milk, communicated with the Vestry authorities. An inspector subsequently took a sample of defendant's milk upon its arrival by train at Euston Station, and that sample, upon being analysed, was found to contain 14 per cent. of water.—The defendant pleaded that the milk in question was sent to London during his absence from the farm by a trustworthy man in his employ. He, at least, did not tamper with the milk, and he thought it would be very hard if he were punished for what might be an act of his servant.—Mr. Newton told defendant he was responsible, and fined him £3, with £2 10s. costs.

This object lesson shows that Mr. Edge is in the

right in his contention. Analysis of milk at Salford as it arrives at the station from the farmers serves a double purpose, for it spikes the guns of any dishonest milk seller by depriving him of the usual defence that the adulteration must have been done by the farmer, whilst it makes competition amongst the farmers, themselves honest, by preventing the unscrupulous milk producer overreaching his competitor by practising fraud. It has been a bad thing for London dairymen and London milk that the Salford plan of taking samples regularly at the railway stations has not been adopted in London, for Salford milk shows only about 3 per cent. adulteration, whilst London milk, in parts, runs up to 30 per cent. or more adulterated. The facts speak for themselves, and show that the farmer's plea that all adulteration is done by the milkman is rubbish.

#### THE PURE BEER COMMITTEE.

THIS Committee has at length been appointed, and it may be as well to frankly say at the outset that it cannot command confidence or respect, for, as a specimen of "packing," it is unique even in Parliamentary committees. It is appointed "to inquire into and report upon the questions whether legislation is required to prevent the use of deleterious substances in the manufacture of beer, and whether the materials of which beer may be composed can be defined by law without undue interference with the liberty of brewers to use any wholesome materials in brewing."

The committee will consist of the following persons: The Earl of Pembroke and Montgomery (chairman); Dr. James Bell, C.B., F.R.S., late principal of the Inland Revenue Laboratories; Sir J. H. Gilbert, F.R.S., the agricultural chemist; Professor Odling, F.R.S., F.C.P., Professor of Chemistry, Oxford University; Mr. H. W. Primrose, C.B., C.S.I., Chairman of Board of Customs; Mr. Clare Sewell Read. Mr. W. Blain, of the Treasury, will act as secretary.

On examining the constitution of the Committee, we see that it consists of Dr. Bell, who was primarily responsible for the advice which led Mr. Gladstone to abolish the malt tax; Mr. H. W. Primrose, who, as chairman of the Board of Customs, cannot but be averse to admitting the folly and wrong of which his department was guilty; Professor Odling, to whom the country, in a large measure, owes the curse of drugging of food by butcher, milkman, brewer, butter-factor, etc., a respectable person, undistinguished for aught save his position; the Earl of Pembroke, a feeble, forcible Jeremiah of agriculture, with as much backbone as a yard of pump-water; Mr. Clare Sewell Read, and Sir J. H. Gilbert, who has taken no interest up to the present in the question of pure beer. There is no public analyst such as Mr. Otto Hehner, or Mr. A. H. Allen, holding independent views and capable of exposing the fallacies and sophistries which the Somerset House gang will adduce to cover their incompetence and folly and their injury to English, Irish, Scotch, and Welsh agriculture. In plain words, the Pure Beer Commission is an impertinent farce, deliberately designed for humbug, and, as it palpably deserves no respect as constituted, its enquiry can only be unworthy of serious consideration.

#### THE COPPERED PEAS AGITATION: ITS ADVOCATES SNUBBED AGAIN.

THE Glasgow Chamber of Commerce is very weary of the London Chamber's efforts to enlist support for the unrestricted sale of poisoned peas.

The Glasgow Chamber some weeks ago, in response to a communication from the London Chamber of Commerce asking their support in a movement which had in view the putting an end to the harassing prosecution of retail traders under the Food and Drugs Act for selling green peas and other vegetables imported



from abroad, instructed the secretary to write that the Glasgow Chamber deprecated the importation of vegetables or other articles of food with poisonous admixtures into this country, and considered that the amount of supervision should be extended, so that the importer as well as the retail dealer should be liable to prosecution for the sale of articles containing such admixtures.

The Chairman of the Glasgow Chamber, on September 14, explained that the London Chamber of Commerce and other chambers had rather taken exception to the Glasgow Chamber's resolution, and had asked them to reconsider the question. The result was a voluminous correspondence, in which he saw nothing that made him personally think that the Chamber should go back upon its resolution.

Mr. Handasyde Dick thought it was a great pity that the London Chamber should return to this question, because there could be no doubt that the Glasgow and other sanitary authorities agreed that peas kept green, or coloured green by sulphide of copper, were injurious to the public health. (Hear, hear.) It was only recently that the sale of these peas was permitted in France itself. Their own sanitary authorities in Glasgow, and, he thought, the public view that was taken of interference on the question was very clear. It was recognised by all that one duty of the Government was to prevent adulterated food being offered for sale; and another duty was to provide that people got what they asked for. If these peas were offered to the public under the title of "Green peas coloured with sulphide of copper," not a single tin of them would sell. He hoped the matter would not be referred to again. (Hear, hear.)

#### ANOTHER SEIZURE OF PUTRID FOOD.

CHIEF-INSPECTOR EDWARDS and Inspector Anscombe attended on behalf of the Vestry of St. George-the-Martyr, Southwark, and submitted for the magistrate's inspection between 2cwt. and 3cwt. of putrid hams, pork, and bacon which had been seized that day at a provision shop in the London-road.—The manager of the shop attended, and said the pork was Dutch and would not take the salt. It was quite good when he received it.—Mr. Marsham: It's very bad now.—An order was then made for the destruction of the stuff, and two summonses were granted against the shopkeeper.

#### COCOA.

At North London, on September 19, Dominick Creech, Ball's-pond-road, was summoned for selling a packet of chocolate powder to an inspector who asked for cocoa. "Half-a-pound of cocoa" was asked for, the assistant to the defendant previously telling him that she had no loose cocoa, and he did not reply when she asked if he would have Epps'.—Dr. White, who prosecuted for the Vestry, submitted that cocoa was asked for, and a mixture of 45 per cent. of cocoa, 35 of sugar, and 20 of arrowroot starch given.—The defendant

added that it was all in packets, and the price of pure cocoa was not paid.—The defendant was called, and said his was only a small shop, and his assistant admitted she had given the packet in question when asked for cocoa.—The Magistrate (to the inspector, Patrick Mernagh): Where did the assistant take the packet from?—The Inspector: A box.—Mr. Mead: What was on the box?—The Inspector: Chocolate powder.—Dr. White said the Vestry had been put to an expense of 10s. 6d. to get the analysis.—Mr. Mead: Yes. You get all the penalty, and I shall order the defendant to pay 22s., including everything.

#### CURIOUS WHISKY CASE.

Two Somerset House analysts declare a whisky to be only 22·8 under proof, or 2·2 degrees stronger than the legal standard of whisky. A retired publican tests with a hydrometer the whisky, and finds it 21·8 under proof. The sample examined by Sir Charles A. Cameron he found to be 28·9 under—or 3·9 in excess of the Government limit. Such was the evidence in an adjourned hearing, at Dungarvan, of a case against Mr. Michael Power, brought by Sergeant Creedon. The solicitor for the defence said: It is a serious thing for a business man doing a good trade to have an imputation of this sort made against him. I would now ask that the costs be given against Sergeant Creedon, which, of course, will not come out of his pocket.—Chairman: Sergeant Creedon did his duty. Sergeant Creedon objected to costs being given against him. If anybody had to bear costs it should be Sir Charles Cameron. The grand jury or myself has not made a mistake. If you will adjourn the case I will communicate with Sir Charles Cameron.—Mr. Williams: I don't see how Sir Charles Cameron can go behind his certificate. The court dismissed the case, and gave £1 costs against the police sergeant.

#### SENT TO GAOL FOR EXPOSING BAD MEAT AT BURSLEM

At the Potteries Stipendiary Court, on September 15, Joseph Challinor, milk-seller, of James-street, Burslem, was summoned by the Corporation of Burslem for exposing for sale, in the Shambles, on September 5, 14 pieces of beef, weighing 160lbs., which were unfit for human food. The Town Clerk (Mr. Arthur Ellis) prosecuted, and Mr. E. A. Ashmall defended.—Dr. Taylor, Medical Officer of Health, Mr. A. Hodgkins, M.R.C.V.S., Hanley, and Mr. J. Sargeant, Borough Inspector of Meat, deposed to the bad condition of the meat, which was soft, flabby, and discoloured, decomposition having set in.—Mr. Ashmall's defence was that the meat was part of a cow which the defendant had fed for killing, that one part had been disposed of to a Burslem butcher without any complaint, and that the condition of the meat was due to the defendant having kept it in a badly-ventilated stable for several days. Defendant, Mr. Ashmall said, was only 17 years old, and was inexperienced in the treatment of meat.—

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Mr. Harold Wright said he had no doubt that the defendant was aware that he was being made a tool of for the purpose of disposing of unsound meat amongst the inhabitants of Burslem. He sent him to gaol for one month with hard labour, and for a further term of seven days if he did not pay £4 3s., the costs of the prosecution. Mr. Wright added that he should consider, if there was sufficient evidence, whether the butcher who had slaughtered the beast and joined the defendant in its sale should not be prosecuted.

#### DISEASED MEAT.

AT Rochdale, on Sept. 16, Thomas Sutcliffe, butcher, of Colby-street, Rochdale, was charged with being in the possession of a diseased carcase of a cow, which was unfit for human food. Mr. Leach, the Deputy Town-clerk, said that on the 7th inst., Mr. James Lee, the assistant nuisance inspector, visited a slaughter-house off School-lane, and found the carcase of a cow hung up which was totally unfit for human food.—After evidence was given, Mr. Butcher, of Bury, who appeared on behalf of the defendant, said that he admitted that it was a tuberculosis beast, and that his client had only discovered that it was diseased a few minutes before the assistant-inspector entered the slaughter-house, and that he then did not intend it for human food.—The magistrates imposed a fine of £15 and costs, or two months' imprisonment.

#### THE ALLEGED POISONING BY "QUAKER OATS" AT BRADFORD.

DR. EVANS, Medical Officer to the Bradford Corporation, made a report to the Sanitary Committee on September 16, with reference to the recent cases of poisoning in Bradford. He stated that the cases were not reported to him until three days after they occurred, and consequently it had been impossible for him to come to a definite conclusion on the matter. He believed, however, that the cream, which was the only article of diet partaken of by both the families affected, was the cause of the poisoning. A chemical analysis of the cream had produced no result, and a biological examination, although revealing the presence of many millions of microbes, which occur normally in cream, did not show anything of a poisonous character. The delay, which had elapsed in reporting the case to him might, however, account for that, since the harmless microbes would have had time to completely decompose the cream. He had found that the milk was obtained from cows which had been driven to Skipton in order to be sold at the weekly market there. Many of those animals had been overdriven, and were left un milked in order that their udders might appear large, and their value be thus increased. Milk obtained from animals under such circumstances could easily produce injurious results. Dr. Evans added that his difficulty in dealing with this matter emphasised the great importance of such cases being reported to him immediately they occurred. Dr. Evans thus exonerates the "Quaker Oats" from any suspicion of having been the cause of the poisoning.

#### THE SANITARY INSPECTORS' ASSOCIATION.

THE annual general meeting of the members of the Sanitary Inspectors' Association will be held at Carpenters' Hall, London Wall, E.C., on Saturday, October 3rd, at 6 p.m. The arrangements for the Session 1896-97 are:—

November 7.—Annual Inaugural Address of the Chairman of the Council.

December 7.—"The Influence of Our Surroundings."

By T. F. Strutt (Strand), Carpenters' Hall, 6 p.m.

1897—January 2.—President's New Year's Address.

Carpenters' Hall, 6 p.m.

February 6.—Annual Dinner.

March 6.—"The Prevention of Tuberculosis" (illustrated). Dr. A. Newsholme, M.O.H., Brighton, Carpenters' Hall, 6 p.m.

## CORRESPONDENCE.

### THE PURE MILK QUESTION.

To the Editor of FOOD AND SANITATION.

SIR,—Will you allow me to make a few remarks in reply to your Maxstoke correspondent.

For four years after the passing of the Act of 1875 the law did not make farmers responsible for either the purity or quality of the milk they supplied to dairymen, and these were four years of vile and wicked persecution of dairymen, unparalleled in our time. To me this seems a strange omission that we should have a new Adulteration Act passed, and exclude the farmers—the growers of our milk, the source and fountain of our supply—from all the pains and penalties of the Act. We are told the present system has failed to bring home the wrong doing to the wrong doer, and this is illustrated by describing how milk is tampered with when left upon the station. To a certain extent this is done, and if the farmers were in any way injured by it it would be a genuine grievance, but they are not; it is the dairyman *only* who suffers in this case. Combination is a very good thing to promote the common interest of the farmers, but when used to defeat the ends of justice, to screen and protect the adulterator, it becomes *conspiracy*, and the noble desire that punishment will fall where it is due is extinguished in this common interest.

I will give you a very recent case, but a very common one in this neighbourhood. A farmer sells his milk with the condition that he sends with each consignment this printed warranty: "Warranted pure new milk with all its cream on." Three shops are supplied with this milk; the inspector following takes samples from each. Our analyst's certificate is twelve per cent. of added water. While waiting the results of the inspector's sample two or three more samples of the farmer's other milk are analysed, with various results, but all adulterated. As we had the official sample with similar results, we have proof for above a week that every sample of this farmer's milk analysed has been adulterated, and the inspector's sample points out the adulterator, who could not be the dairyman, for the simple reason that the dairyman had never touched the milk.

With due deference to our Maxstoke friend, without the present system no farmer could be reached, and the wrong doers would flourish while innocent men would suffer in their stead. Your correspondent seems to think that the milk delivered at the railway station is all right, and quite good enough for the dairyman or even the inspector who may meet him on his round, but when the scene is changed and the inspector visits the railway station for the farmer's benefit the whole thing is altered—we have a wriggling out, or backing-out process; all kinds of idle tales are invented that the milk is being tampered with in all directions, and this modest and disinterested gentleman would like the farmer's responsibility to begin some distance from where the inspector's ends. This would put farmers once more beyond the reach of the law. Further, respecting this system, that is said to have failed, I do believe that the farmer has no reason to complain about the system. The farmer's milk leaves the farm in charge of the farmer or his servant, and is with others put into the milk van, and they all see it leave the station. The inspector is waiting the arrival of the train, he takes charge of the milk, mixes it well up before he takes a sample, and this in the presence of the dairyman and others. If the milk is tampered with by outsiders, it must be done while in transit, and I could as soon believe that a man could tamper with the moon as board a train going twenty miles an hour, hampered with cans, get into the milk van and find a certain can or cans in the dark. He would then have to leave the train the same way without being seen, and this he would have to do for one or two weeks every day. No person could do this for profit, as the



result would be so small as to be of no consideration. Then, what other object could tempt so many persons to risk their lives and liberty in such an aimless and unprofitable undertaking? The whole thing is so improbable that no reasonable man could entertain it, besides, about half the farmers admitted it, and then explained the circumstances. Our friend tells us the law has failed in bringing home the wrong doing to the wrong doer. Well, our police reports show that above half the convictions in this neighbourhood are of farmers and small shop-keepers, who are always indifferent until it is too late, and we have reduced the percentage of adulteration from twenty per cent. to three per cent. This does not look like failure. There is only one way to convert our friend, and that is to make a dairyman of him.—Yours, etc.,  
 ROBERT EDGE.  
 Manchester.

## THE UTILISATION OF HOUSE REFUSE.

To the Editor of FOOD AND SANITATION.

SIR,—The paragraph in your issue of September 19, *re* "Wicked Waste," affords information of the practically useful order, and reflects credit on the originator of the plan of treating house refuse. If we could only educate the public, and more especially the rural population, who, with their gardens or allotments have the means of using profitably what often proves a source of danger to health, we should be encouraging thrift, lessening the causes of disease, avoiding one of the sources of pollution of water supplies, and thereby promoting happiness.

Any method which teaches the practical application of "waste" products to their natural uses should be encouraged, and in this direction I anticipate that more real good would result from courses of lectures on rural hygiene, delivered by competent authorities sent out by the County Councils, the cost of which might easily be met by monies at present devoted to agricultural scholarships and kindred objects—with questionable results.

Shortly since I availed myself of the privilege of an inspection of a house and garden where there is no waste, and where all refuse is returned to the soil with the happiest results, and with immense credit to the owner, Dr. Vivian Poore, whose practical book on rural hygiene should be better known to be appreciated and acted upon. This book from its clearness of statement, its easy, unaffected style, and the absence of unnecessarily hard scientific terms, is most pleasant reading; and the result of thirteen years of experiment and trial has proved the value of the plan he has adopted.—I am, yours obediently,

W. T. PARKER DOUGLAS.

Ivy House, Newbury, Sept. 20, 1896.

## WHY, WHEN, AND WHAT WE EAT.

By SIR CHAS. A. CAMERON,

*Medical Officer of Health, Dublin; Public Analyst; etc.*

AT Newcastle Town Hall, on September 8, Sir Charles Cameron, who was greeted with hearty cheers, said he complied most readily with the invitation of the Sanitary Institute of Great Britain and Ireland to give a lecture in connection with the interesting and important Congress which had been held in that ancient and beautiful city of Newcastle. He did so because he had always taken an interest in the Sanitary Institute. He had the honour of being President of the very first Congress held in connection with it. He was also pleased to get the invitation because he would like to come in contact in this familiar way with the citizens of Newcastle, having lively and pleasurable recollections

of his former visit to the city. (Cheers.) The subject he had selected was one which would offer sufficient material for a very long course of lectures; therefore, what he had to say that night must be of a desultory and perhaps more of a trite nature. He had divided the lecture, like a sermon, into three heads—"Why we eat, when we eat, and what we eat." Why did they eat?

To understand this it was necessary to begin at the very beginning. That world had been studied for many centuries by some of the greatest philosophers who had ever lived. It had been the subject of all kinds of scientific processes, the results of which had shown that, various as were the natural works in creation, they might be all resolved into a comparatively small number of constituents. When they saw the almost infinite variety of the aspects nature presented to them, they could not but come to the conclusion that nothing was more wonderful than the fact that all these varied objects, the billowy sea, the mountains, the vast plains which stretched before them, the various objects of the vegetable kingdom, and the almost infinite variety of animal life could be resolved by chemists into a comparatively small number of constituents. These they called the elements. Let them take the wonderful process known to chemists under the name of analysis.

Take, for example, a piece of chalk. By the process of analysis they could resolve it into two other substances, lime and gas. Carrying the process further, they could extract from the lime a metal as brilliant as silver—calcium. They could also extract from it oxygen gas, which they all breathed. Besides this, they could take from it a black substance which was nothing more than charcoal. By all these wonderful processes of the analyst we could only resolve chalk into three bodies—into a brilliant metal, a black substance, and into oxygen—the vital principle of the air that we breathed. This had been accomplished in the present century by the chemist. If we took these three elements and tortured them as we might in our crucibles and subjected them to the highest temperature obtainable, we could expect nothing more from them—oxygen remained oxygen, calcium remained the metal that it was, and carbon remained as it was.

These, therefore, we termed, in our present state of knowledge, the raw materials out of which were built up our daily products. There were other bodies like them, but taken altogether, the number was comparatively small. They numbered altogether about 70. Of that number one half at least occurred in such small quantities that the most sagacious chemist had been unable to assign them any importance in the economy of creation. Like everything that had been created, no doubt they had their uses, but, whatever their functions might be, they were of comparatively little importance when compared with the attributes of some 20 or 30 of these bodies. Of these 70 about a dozen alone made up the objects we meet in everyday life. Only about 12 or 13 occurred in our own bodies, those that made up the atmosphere and that constituted the ocean.

Oxygen, hydrogen, nitrogen, carbon, sulphur, phosphorus, potassium, magnesium, and one or two others made up nearly every substance of vital importance. It was the combinations of these elements with which they had to deal that evening. The elements which formed the three great kingdoms of nature—the animal, the vegetable, the mineral—existed in two different conditions. In one of those conditions they were inert and lifeless. These formed together under peculiar circumstances, and in obedience to the great force, which they called vital force, under peculiar combinations. This form was termed the organised, in contradistinction to the mineral or lifeless form of matter, such as stone, metal, etc.

(To be continued.)



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## Food and Sanitation.

SATURDAY, OCTOBER 3RD, 1896.

### TO REVOLUTIONISE SEWAGE DISPOSAL.

THE water carriage system is in its nature a nuisance, tolerated only because it has been found the least objectionable of the nuisances connected with sewage disposal. Still, the fouling of our rivers and sea-shores is not a thing to be satisfied with or proud of, and when we think of the trouble, dirt and disease connected with our drainage systems, which, however perfect may be the work at the time of laying, inevitably go wrong, sooner or later, we are driven to the conclusion that it would be well could we be rid of the whole system, however much makers of drain pipes and all therewith connected would lament its disappearance. The earth closet system has been found impracticable for towns for

many reasons, the fact being that it is hopeless to expect from certain classes of the population the necessary attention to its requirements which prevents it becoming offensive. Any new proposals, therefore, for sewage disposal, even should they be in some respects considered impracticable, should be welcomed because they set minds at work on new ideas, and may at length lead to useful improvements. Mr. Alfred J. Allen, of the London Institution, Finsbury-circus, has ideas on sewage disposal of a novel nature. Mr. Allen says:—

"It may be taken for granted, indeed, human nature being what it is, that any system of house drainage to be efficient must not give any trouble, the fulfilment of this condition being the main cause of the popularity of the underground sewer. From the less-known earth-closet, however, we may learn a valuable lesson, and that is the advisability of dealing with sewage *in detail*, so that the house may be entirely independent of drains and the diseases so readily spread by their means. 'True,' it may be answered, 'this is very well for the *country*; for *towns*, however, it is impossible.' Is it, however, so impracticable as at first glance it appears? Let us see, and, first of all, let us enumerate the conditions that we have found to be essential for such a system.

- "(1) Automatic action.
- "(2) Convenience and cleanliness.
- "(3) Simplicity.
- "(4) Independence of special material for treatment.
- "(5) Ease of removing products of treatment.

"In endeavouring now to devise some method that shall satisfy these conditions, it will be best for us to give up all idea of *utilising* the excreta of a crowded community as manure, experience having shown that their value as such is not sufficient to pay the cost of collection and carriage of the bulky products involved. We must, in fact, as an eminent authority has remarked, treat sewage under these circumstances as an enemy to be got rid of and destroyed. Now, for this purpose, to what simpler and more efficient process can we subject offensive matter of all kinds than the direct action of *heat*? An intense heat is the best and quickest purifier known to us, and for the subject under our immediate consideration it has this further practical advantage, viz., that the noxious ingredients of the refuse are separated and driven off as gas, and all that is left behind is a harmless ash of much less volume than the original mass before treatment, and so more easy to dispose of.

"Having decided, then, on the application of heat as our method of treatment, we shall require a special apparatus to be attached to each closet for the purpose of subjecting its contents to a high temperature, and as a 'working hypothesis' we may suppose that this converter or destructor (or whatever else we like to call it) is a cubic construction of brick and stone with a flue leading to the top of the house, a short pipe communicating with the closet, and an iron evaporating pan with gas jets underneath. A close-fitting door is provided in the front, through which the pan may be withdrawn, and, to complete the isolation of the converter, the necessary air for combustion may be taken directly from the outside. This air, being admitted under the pan and heated by the gas jets, will pass behind it and there be deflected so as to sweep across its inner surface from back to front before escaping up the flue. It is evident then that any liquid in the pan will be quickly driven off as vapour, and the solids desiccated and reduced to ash under the influence of the great heat both below and above them. In fact, the liquid excreta are in this apparatus as readily dealt with as the solid (which cannot be said of the earth closet), and we have thus no hesitation in using a moderate amount of *water* as a vehicle for transferring the said excreta from the closet into the converter. This is a very important point, as nothing is so cleanly and convenient (considered in



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itself) as a water closet; as, however, there is no length of pipe to flush and keep clean, we may reduce the amount of water to very much less than is necessary in an ordinary wash-out closet, since it is desirable to keep the amount of liquid to be evaporated within as small limits as possible.

"The cycle of operations would in fact be somewhat as follows: On pulling a plug or handle we should open a valve at the bottom of the closet pan so as to allow the contents of the latter to flow into the converter, the valve immediately and automatically returning to its place, and a small quantity of water then filling the bottom of the pan as before. The action of the plug would also turn up the gas jets in the converter and subject the diluted sewage in the evaporating pan to a high degree of heat for a certain regulated time, when they would be automatically turned down again. To guard against the evaporating pan being over-filled by repeated use of the plug, it would be made to sink on attaining a certain weight, thereby closing a separate valve and cutting off connection with the closet, the contents of which could not be discharged till the reduction of the weight by evaporation. It may be remarked that this safety valve (as it may be called), together with all the mechanism of the converter, would be placed out of reach of unauthorised interference, the door of the converter being kept locked and the key held by a responsible person or official of the local authority.

"It will be seen that the arrangement that we have endeavoured to roughly describe combines the convenience of the water-closet with the very great sanitary advantage of a total absence of drains and of the sewer gas ever ready to escape from them at a weak point. And not only may the *sewage* of a house be treated in this simple and summary manner, but *kitchen refuse* of all kinds may be subjected to the same purifying process, so as to dispense with the necessity of a dust-bin, the residual waste being gathered periodically from the various converters, and conveyed away to be dealt with as may seem best.

"One word more. It would be idle to suppose that the description just given is anything more than an outline, a suggestion. To settle the best form and arrangement of the various details would require much patient and careful experiment, and perhaps considerable modifications would need to be introduced. But the *principle* would remain the same throughout, and that is the provision of a simple automatic method of treating sewage and other waste in each separate house, instead of sending it forth in its unadulterated filthiness to be a nuisance and danger to the community. To many, perhaps, who may not have given much thought to a somewhat difficult and not very agreeable subject, the principle just mentioned may seem unnecessary and Utopian, and the existing usage to fulfil all reasonable requirements; but there is very little doubt that the

zymotic diseases ever at work in our large towns and cities may be traced to the poisonous gases that no amount of care can confine absolutely to the drains. Is it too much to hope that in the city of the future (some *diminished* and glorified London, for instance), the mephitic underground sewer will be unknown, and pleasant brooks, no longer buried in darkness, flow through the streets of it on their journey towards the sea?"

There is no doubt that the proposal would meet with the full approval of the gas and oil companies, and it would commend itself to the water companies, for reasons which we shall make clear. It is worthy of consideration how far that which Mr. Allen modestly calls a suggestion, would be likely to be acceptable. In the first place, it would considerably alter the character of the London atmosphere by vapourising the millions of gallons of water used for closet flushing and other house purposes, and we might also reckon on a much heavier rainfall and a crop of diseases incidental to excessively humid districts. But against this we could set off some of the millions we shall have to expend to secure a sufficiency of water for London's present and future requirements. A great deal of water is used for flushing closets, but to save, say, one-third of this water would need a closet of an entirely different construction to the existing ones, for even although the expert who could not tell a lie—Sir Frederick Bramwell—says two gallons is enough for a flush, our unhappy experience compels us to say that his statements sound more like the outcome of a heavy fee than an imitation of George Washington. An improved closet for the new conditions would gladden the hearts of the Jennings, Doultons, Twyford, etc.—Imagine contracts for removing every existing w.c. in London, the construction of the converters and flues, and the manufacture of the gas, oil, or other fittings! They would, indeed, cause gladness in some industries, and wouldn't the soul of the genuine friend of man—and himself, Mr. George Livesey, and his fellow gas monopolists, and the hearts of the American oil villains, contrivers of murder and arson, throb with satisfaction at the thought of the gas or oil that would be required for the vapourising of so many millions of gallons of liquid, and the desiccation of so much solid sewage per family of five or six million Londoners. Why, Mr. Livesey, in the joy of his heart, would be, perhaps, good enough to contrive and force another London gas strike on it, for he and his fellow gas and oil monopolists would have the Londoner's health and olfactory organs at their mercy, as they now have London's lighting. We do not know if any of these considerations presented themselves to Mr. Allen when he propounded his scheme, but it is plain that there is a great deal in it for the gas and oil monopolists and for those who would get the contracts for the water closets and fittings. The automatic fixings, like all automatic arrangements, would work admirably on paper, but if they came to be used, say, in Drury-lane slums! Still, this suggestion of Mr. Allen's is not without its value, and might be worth experiment in places where no system has yet been adopted.

## LENGTHENED LIFE BY SANITATION.

### A HALF CENTURY'S RECORD.

For the first time we are furnished, by a report issued from the Registrar-General's Office, with a measure of the improvement wrought upon the public health by public sanitary work during the past fifty years. Dr. John Tatham has worked out a record of decennial health statistics for every registration district and county, and brought it up to the year of the last census. One sees at a glance the history of this improvement in



the following table of death rates per 1,000 persons living :—

|                  | 1841<br>to<br>1850 | 1851<br>to<br>1860 | 1861<br>to<br>1870 | 1871<br>to<br>1880 | 1881<br>to<br>1890 |
|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| England - - -    | 22                 | 22                 | 22                 | 21·3               | 19·1               |
| Lincolnshire - - | 20                 | 19                 | 19                 | 18·6               | 17·5               |
| Notts - - -      | 21                 | 22                 | 22                 | 21·2               | 19·4               |
| Lancashire - -   | 28                 | 26                 | 27                 | 25·2               | 22·4               |
| York—W. Riding   | 23                 | 24                 | 25                 | 23·2               | 20·0               |
| „ E. Riding      | 24                 | 22                 | 23                 | 21·4               | 19·5               |
| „ N. Riding      | 19                 | 19                 | 20                 | 19·7               | 18·2               |
| Durham - - -     | 22                 | 23                 | 23                 | 23·8               | 19·8               |
| Northumberland - | 22                 | 22                 | 23                 | 22·7               | 19·8               |
| Cumberland - -   | 21                 | 21                 | 22                 | 21·5               | 18·4               |
| Westmorland - -  | 19                 | 18                 | 18                 | 17·7               | 15·5               |

It is evident that almost everywhere the improvement belongs to the last twenty years. Ten years ago, when it was diagnosed, Dr. William Ogle had to say that the saving of life was among young persons only; but now Dr. Tatham shows that in 1881-90 it has affected all ages, save in men the time of life between 65 and 75. This exception, too, is trivial. Men between those ages have died at a rate heavier only by one per cent.; while the percentages of decrease at other ages have been remarkable. Here are the principal of these:—Deaths at all ages, 10·3 per cent. fewer; under one year, 10 per cent. fewer; one year to five years, 17·7 per cent.; five to ten, 18·4; ten to fifteen, 18·4; fifteen to twenty, 20·3; twenty to twenty-five, 15·7; twenty-five to thirty-five, 9·5; thirty-five to forty-five, 3·7.

The immediate effect of these calculations upon assurance must be to increase the expectation of life at all ages in females, and at the earlier ages in males. We do not know to what extent the companies' actuaries have modified the bases of their tables during this decennial period; but it is probable that most of them have used without question the "English life tables," issued by the Registrar-General ten years ago. In that case, most persons who are insured have for some time been paying too much, and should expect the return, in one form or another, of some part of their premiums. In the following table we show how many years the average man at certain age periods may still expect to live, and how the expectation has increased for these ages since 1838 :—

| Expectation of Life. |          |          |          |
|----------------------|----------|----------|----------|
|                      | 1838-54. | 1871-80. | 1881-90. |
| At 15 years -        | 43·18    | 43·41    | 44·47    |
| At 21 years -        | 38·80    | 38·64    | 39·46    |
| At 25 years -        | 36·12    | 35·68    | 36·28    |
| At 30 years -        | 32·76    | 32·10    | 32·52    |
| At 35 years -        | 29·40    | 28·64    | 28·91    |
| At 40 years -        | 26·06    | 25·30    | 25·42    |

If this computation is begun at birth it shows 39·91 years to have been the average expectation in the first period, 41·35 years in the second, and 43·66 in the third. It is curious to find that in nearing the great age of 100 the expectation of reaching it is not so great as it was. An old man touching his 98th birthday might expect between 1838 and 1854 to live for a year and eleven months odd; nowadays he must make shift with the likelihood of a year and five months.

The simplest way of stating this improvement is to say that during the ten years we saved 2,192 lives annually in each million of the English population. Of this number 189 were saved from small-pox, 382 from scarlet fever, 261 from diarrhoeal diseases, 392 from phthisis, 197 from diseases of the nervous system, 170 from diseases of the respiratory system, 126 from enteric fever, 85 from violence, 78 from continued fever, 62 from whooping-cough, 61 from digestive ailments, and 43 from typhus. On these and other diseases there was, in fact, a yearly saving of 2,758 lives per million; but as a set off, 566 more lives per million were lost to diseases of the circulatory system (237), to

cancer (121), to diseases of the urinary system (85), to measles (62), to diphtheria (42), and to diabetes (19). As demonstrating the comparative healthiness of town and country, a further table is of great interest. It shows the death rates per million persons living :—

|                    | All<br>causes. | Measles. | Scarlet fever. | Whooping<br>cough. | Diarrhoea. |
|--------------------|----------------|----------|----------------|--------------------|------------|
| 28 Chief Towns ... | 21,505         | 626      | 403            | 612                | 890        |
| 50 Small Towns ... | 19,733         | 496      | 387            | 419                | 727        |
| Rural England ...  | 17,634         | 329      | 286            | 366                | 520        |

The counties exhibit considerable differences. For examples, the annual measles rate was but 133 per million in Westmorland, yet it reached 709 in Lancashire. The rate for scarlet fever, only 99 in Suffolk, amounted to 533 in the West Riding. In 1871-80 Durham had shown the highest mortality from this disease, losing 1,376 lives per million to it; while Northumberland had lost 1,145 and Lancashire 1,126. Diphtheria, which is not included in the above table, destroyed every year 168 lives per million in urban and 159 in rural England, no great difference; yet the rate was 82 in Durham, 85 in Cumberland, and 88 in the East Riding, while in London, Essex, and Middlesex it was over 260. Whooping-cough did least mischief in Westmorland, with a death-rate of 193 per million, and most in Lancashire and London, with 520 and 690 deaths per million respectively. Typhus lingers longest in certain manufacturing areas of Cheshire, Lancashire, Durham, and Northumberland; in Westmorland it has not been heard of as a cause of death since 1880, and in 23 other counties it has not been accountable for more than five deaths in the million annually. Enteric fever still works much havoc in the North Riding, Lancashire, Notts, and Durham; and it is worthy of record that in the chief manufacturing centres it kills more men than women.

The case of cancer is also peculiar. There is, and has been for thirty years, a fairly well defined area of prevalence for it. This includes the districts of Stamford, Bourn, Spalding, and Holbeach, in Lincolnshire; Oundle and Peterborough in Northants; and almost the entire counties of Huntingdon and Cambridge. The cancer death-rate has here averaged in the past decade 859 per million every year, while the rate for all England is 589 per million. To a large extent this is explained by the fact that they have a population which contains many more middle-aged people than the rest of the country, and cancer is chiefly confined to persons above 35 years. The cancer rate of Huntingdon is, to that of Durham, as 208 is to 100; but if they had populations of equal ages, it would only be as 127 to 100. Phthisis carried off on an annual average 1,724 persons per million: but in Northumberland it claimed 2,095, and in Worcestershire only 1,217. About this disease, which is prevalent chiefly because the public do not realise that consumption is equally infectious with many other diseases, though its effects are slow, the strangest fact is that in some counties it attacks men mostly and in others women. In London and five Southern or Midland counties from 27 to 55 per cent. more men than women die of it; in South Wales, Durham, Lincolnshire, and the North Riding the male deaths are from 12 to 21 per cent. the fewer. —*Yorkshire Post*.

#### ACCOMMODATING MAGISTRATES AND SKIMMED MILK.

At Lawford's Gate Police Court, on September 24, before Messrs F. Tagart, W. Sommerville, Arnold Thomas, and W. Smith, Charles S. Whitting, milk dealer, of Horfield, was summoned for selling milk adulterated with 11 per cent. of added water, at Horfield, on September 1.

Inspector Hawkins stated that on the day in question he bought a pint of milk from defendant's servant, who was going round with it in the ordinary course. Some time afterwards the man returned and explained that it was skimmed milk that he had sold. He took it to



Gloucester, and now produced the analyst's certificate, which stated that there was 11 per cent. of water in it.

In answer to Mr. Sandford (Gregory, Hirst, and Sandford), who defended, witness said that the man returned to him shortly afterwards and said it was skimmed milk. He did not say that it was a pure mistake.

For the defence Mr. Sandford stated that for 15 years the defendant had been a dairyman, and it was not till this month that any suspicion had been cast upon the quality of the milk sold by him. His first point was that no offence had been committed. The inspector asked for milk, and he got milk. It was skimmed milk, it was true, but when milk was asked for it was not understood that it must be the best milk. Having quoted the case of *Lane v. Collins* in support of this argument, Mr. Sandford said that his second string was that the man acted in disobedience to the orders of his master. Mr. Whitting, in order that no mistake should arise, sent out two rounds. First the man went round with the best milk, and then came back and took out a can of skimmed milk. On the day in question the man had gone on the first round, and was just returning from the second when the inspector came. The man was new to the work, and flurried at the time, and sold the skimmed milk.

Howard Whitting, of 127, Gloucester-road, Bishopston, stated that he was a son of the defendant, and had managed the business for 12 years. Marsh, the man from whom the milk was bought, was new to the work. He received orders to take the two rounds, and in the case of the skimmed milk to charge 1d. per pint. On the 1st the milk sold to the inspector was skimmed milk, and there was no pretence that it was anything else.

The Magistrates' Clerk (Mr. Latcham) pointed out that the price for the best milk was 1½d. per pint, and this was the price the inspector was charged for what was admitted to be skimmed milk.

Elizabeth Saunders, married woman, of Egerton-road, gave evidence as to buying skimmed milk from Marsh on the day in question at 2d. per quart.—The milkman who sold the milk to the inspector was also called, and he admitted charging 1½d. for the pint of milk, but said that it was a mistake, and two minutes after he did so he remembered that he was taking skimmed milk, and he went and found the inspector and told him so.

The magistrates, whilst expressing the opinion that Mr. Whitting's way of conducting business was not the best, said there was considerable doubt in the case, and they would give him the benefit of it. The summons would be dismissed on payment of costs.

#### THE WARRANTY QUESTION AGAIN.

At Dronfield Petty Sessions, on Sept. 14, Thomas Marshall, grocer, Dore, was summoned by Colonel W. A. Shortt, inspector under the Food and Drugs Act, for selling butter containing 65 per cent. of fat other than butter, on June 23.—Mr. Middleton, Chesterfield, prosecuted, and Mr. W. Porret, Sheffield, defended.—Mr. Middleton said so far as his case was concerned it was an ordinary case of selling as butter that which was not butter. He understood, however, that the defence was that a written warranty had been given to the defendant by the firm from which he purchased the butter. If that were proved, and defendant showed that he sold the butter in the same condition as that in which he received it, he, of course, complied with the law.—Wm. Marples spoke to purchasing the butter.—In answer to Mr. Porret, he said he did not point to some butter and say, "I want half-a-pound of that."—Colonel Shortt produced the certificate of the county analyst stating that the sample contained 65 per cent. of fat foreign to butter.—In cross-examination he said

he had no doubt that the butter was sold in the same state in which it was bought.—Mr. Porret, for the defence, submitted that the defendant bought the butter as Kiel butter, and it was guaranteed as pure butter.—Thos. Marshall, the defendant, said he had been in business at Dore 15 years, and had no complaints. The butter bought by Colonel Shortt was obtained from Messrs. Biggin and Sons, Dixon-lane, Sheffield. He received with it a guarantee that the butter was pure, and he had never purchased any margarine in his life.—By Mr. Middleton: He had never sold any other butter over the counter but Biggins'. The warranty was given on the Friday following the Tuesday on which he paid for the butter. He had had a verbal guarantee when he first purchased the butter.—Harriet Marshall, having given evidence, Mr. Middleton submitted that the written warranty should be given when the goods were purchased. It was of no value to get a written warranty after Colonel Shortt had paid his visit. If such a device as that could be adopted they would get back to the original seller at Hamburg, who was out of the jurisdiction of the Court. It could not be a warranty which was given after the goods were paid for.—The Magistrates considered the warranty produced was not a legal one. It was a case of gross adulteration. They could quite believe the defendant bought the butter in good faith, but they were bound to convict. Defendant was fined £1 10s., including costs.

#### DISEASED MEAT AT GRIMSBY.

The Grimsby Sanitary Committee recommended that proceedings be adopted against Thomas Whitworth, of Cleethorpe-road, butcher, for having deposited on his premises for the purpose of sale, and intended for the food of man, beef which was not fit for human food. After considerable pleading, however, it was decided not to prosecute.

In the case of George Jennings, of Highfield House, Weelsby, farmer, it was decided that the matter should be referred back to the committee.

Our contemporary, the *Grimsby Independent*, very properly takes the Town Council to task as follows:—

"Bad Meat Cases.—Anyone who happened to be at the sitting of our Town Council last evening, would no doubt be surprised at the large amount of pleading indulged in by certain members on behalf of two persons against whom the sanitary authority recommended proceedings to be taken for having deposited on their premises certain meat which was intended for the food of man, and which was not fit for human consumption.

"A petition had been forwarded to the Mayor, signed by a number of shopkeepers and others, praying the Corporation to stay proceedings, as the butcher referred to had suffered considerably with regard to his trade, and also mentally. The meat had been seized and condemned by the inspector owing to the animal from which it was obtained suffering from tuberculosis, a most dangerous disease. The Councillors seemed to lose their heads, they were so sympathetic; and their discretion and good judgment was thrown aside entirely. One Alderman said he had seen the beast himself, and he was sure it looked all right, but then, surely, he cannot set himself up as an authority against the Medical Officer of Health. He even went so far as to aver that he was extremely sorry he had not taken a piece of the meat home with him to cook. We think in this case his forgetfulness has saved him, for had he eaten the meat there is more than a remote possibility that a bye-election would have been necessary in his ward. Then, again, the animal could not have been healthy, as the Alderman tried to make out, or why should another pleader, one who is in the butchering business himself, say that there was not much wrong with the beast. This admission must point clearly to the fact that there was something wrong. Had



the Councillors been in a thinking mood, they would have seen they had a duty to perform to the public. Their first duty in the Council is as public servants and not as sympathisers with those who are alleged to have broken the law. Hitherto they have not doubted the ability of their inspectors to discriminate between a *bonâ fide* case and one that is doubtful, yet, last evening, their actions and talk would, if anything, seem to suggest that the inspectors did not know their business. We are inclined to think, however, that the officers have far more discrimination than their masters, who evidently did not appear to be aware it was their duty to send the cases to the magistrates and let them decide, not to try them in a Council meeting. The Inspectors had every confidence in their cases, but it was a noticeable fact that the discussion was all one-sided, and the Inspectors were not even asked for their opinion in the first case. The case in which the Council decided not to prosecute, principally because the butcher had paid £17 for the beast, and it had turned out an ailing one, would appear to be rather a serious one, if we are informed correctly, for the meat was laid out in the shop for sale, and some of it had been sold. Supposing, for instance, there had been a serious illness, or, perhaps, a death, caused through consumption of such meat, what would the cry then have been. People would have said, 'Where are our Inspectors?' Yet when the inspectors bring what they consider a *bonâ-fide* case before the Corporation, the latter allow sentiment to stand before the health of the public."

#### EXPOSING BAD MEAT FOR SALE.

At the Nottingham Summons Court, on September 25th, Henry James Taylor, of 24, Lamcote-street, butcher, was summoned for exposing, on the 13th of June, twenty-one pieces of beef, 176lbs. in weight, intended for human food, for sale at 63, the Shambles.—Mr. F. Harris (from the Town Clerk's department) prosecuted, and Mr. W. B. Smith defended.—Mr. Harris said that the delay in bringing the summons was due to the defendant leaving the town. He went to the Isle of Man, he believed, and the summons could not be served upon him.—H. T. Moore, inspector of nuisances for the borough, said that about 6 p.m. on Saturday, the 13th of June, his attention was taken by some beef hanging in a shop in the Shambles. It was dark in colour, almost black, soft in texture, and gave off a most offensive smell. The hip-bone was diseased, and there were extravasations in the deep muscles, with effusion of serum as a result of disease during life. The carcase was that of a middle-aged cow, and the total weight of the remains was 176lbs. It was unwholesome, unsound, and totally unfit for human food. He seized it, and two hours later it was condemned and destroyed. The defendant was not in his shop when the seizure was made, but afterwards he came to him with a certificate purporting to have been received from a veterinary surgeon with respect to the carcase.—By Mr. Smith: The defendant said he had had the carcase in an icehouse since the 9th of the month. It was very warm at the time, and the meat would not be improved by being kept that time. There was no attempt at concealment of the meat in any way.—Dr. P. Boobyer, medical officer of health for the borough, said he saw the meat, and was of the same opinion as the last witness, that it was totally unfit for human food.—Mr. Harris then called Mr. Furness, the veterinary surgeon who gave the certificate.—Mr. Smith said he did not see that Mr. Furness's evidence had anything to do with the case, as anything which took place between the veterinary surgeon and the previous owner of the meat was not evidence.—Mr. Harris said that it was only fair to the veterinary surgeon that he should explain the matter as far as he was concerned.—The Magistrates decided to hear the evidence, and witness said

that on June 9 he inspected a carcase at Mr. Bush's slaughterhouse, on Wilford Hills. Defendant applied to him for a certificate, which he gave him. Subsequently he saw the meat which was condemned, but it was not the same that he examined at Bush's slaughterhouse.—Mr. Smith said his client pleaded guilty to exposing the meat for sale, but there were certain circumstances which mitigated the offence. With regard to the certificate he did not see that that had anything to do with the case. He put it to their Worship in this way. The defendant purchased the carcase from a Mr. Machin. Mr. Machin asked Mr. Furness to examine the carcase. The defendant, to protect himself, went to Mr. Furness, to whom it had been reported to him the carcase had been shown, and asked him for a certificate. Whatever was done by Machin or anybody else did not affect the defendant. He simply purchased the meat, and being informed by the vendor that it had been examined, applied for a certificate. There was no evidence of trick on the part of Taylor. It might be that a trick was played upon him. He made no attempt at concealment. It was exposed in the icehouse from early morning until it was seized in the Shambles. With reference to the delay in hearing the summons, the defendant did certainly run away, but he voluntarily returned at the advice of his friends.—The Chairman said that the defendant had made himself liable to a fine of £420. They were compelled to protect the public, and would impose a penalty of £50, or three months' imprisonment.

#### CO-OPERATION PLUS DISEASED MEAT.

BAILIE DICK, on September 25, enquired into co-operation. Adam Todd, 20, Alexandra-parade, secretary of the St. Rollox Co-operative Society, Limited, 121, Kennedy-street, was charged, as representative of the society, with having had in his possession on Sept. 17, in the society's butcher's shop at 8, Osborne-street, 34lbs. of beef in pickle, which was unfit for human consumption.—Todd pleaded not guilty, and was defended by an agent.—The first witness was Inspector Thomas D. Young, of the Sanitary Department. He deposed to visiting the shop in question on Thursday, 17th inst. After standing speaking to the shopman for a minute or two witness went over to a pickle tub, and, lifting the lid, he found the contents were smelling. Witness said, "This beef is not good." The shopman replied, "I know that; I have only been here for two or three days, and was going to report the matter to a meeting of the committee to-night." The meat consisted of eleven pieces of pickled beef, weighing 34lbs. He was of opinion that the meat must have been tainted when it was put into the tub. Some of the meat was rolled up and had only to be dried, while the other pieces were in process of preparation.—Dr. Chalmers, one of the medical officers for the city, testified to the meat being unfit for human consumption. Putrefaction had begun in all the pieces. He was not in a position to say whether good meat had been put into bad pickle, or bad meat into good pickle. Good meat in bad pickle would go wrong.—By the Assessor: Defendant should have known that the meat was bad a day or two before it was seized.—Inspector Warnock, who was next examined, said that whenever the meat was disturbed a smell came from it. He was of opinion that the meat must have been beginning to go wrong when it was put into the pickle.—By the Agent: The man in the shop said he had spoken to another shopman about the matter, but had got no satisfaction.—Robert Cousin, shopman, was the first witness for the defence. He said he started in the shop only on Monday. He knew that day that the pickle was bad, and he had no intention of selling the meat. He, however, asked for authority to dispose of it. A man named Dennistoun, in charge of the Castle-street shop, came in, and he told him the meat was bad. Dennistoun was to convey this intelli-



gence to the committee, but he did not know whether he had done so or not. If the meat had been good he would have had it in the window before the morning the inspectors called.—The Fiscal: Do you think it shows good management to keep bad meat in a shop from Monday to Thursday?—Witness: It was not my pickle. It was the man who was in the shop before me that made it up.—The Fiscal: But you were the responsible party at that time. You say, however, that you gave this man Dennistoun instructions about it on the Monday, and the Co-operative Society so manages its business that you had no instructions on the Thursday.—Witness: I had no instructions.—By the Assessor: Between Monday and Thursday nobody asked for pickled meat.—George Pringle, chairman of the St. Rollox Co-operative Society, said they gave instructions to their shopmen not to sell anything that was tainted. This young man Cousin had not got these instructions by the time the inspector called. It was in the interest of the Society to sell the best meat they could, for in disposing it to members they were practically selling it to themselves.—By the Fiscal: He admitted there had been carelessness.—The Fiscal: Yes, your business is conducted in a very loose manner. This closed the evidence.—The Fiscal, in asking for a conviction on the ground that the meat was unsound and unfit for human food, said that when they knew the system of management carried on in these shops they knew why the public did not flock there in their thousands to get their meat. They had here an exhibition of Co-operative carelessness, and he hoped his Honour would punish it.—The agent for the defence maintained that as the man had no intention of selling the meat, a conviction could not be obtained. He thought the remarks of Mr. Neilson regarding the co-operative system were uncalled for.—The Magistrate said it had not been proved to his satisfaction that the meat was not left in the shop for the purpose of sale, and he would impose a penalty of £3 3s., with the alternative of 21 days' imprisonment.

#### MILK.

GEORGE GREEN was summoned at Newport Police-court on Sept. 28, for selling adulterated milk. The analyst's report showed that the milk contained seven-tenths per cent. of added water, and defendant, who pleaded that he bought the milk and did not know it was adulterated, was fined 40s. and costs.

#### PUTRID FISH.

At Worship-street, on September 28, Fanny Albert, also known as Weinberg and Wenberg, appeared to answer a summons at the instance of the Sanitary Authority of Whitechapel for exposing a quantity of fish, unfit for human food, for sale.—At the outset of the case the defendant protested ignorance of English, and the interpreter was sworn (at an expense of 7s. 6d.) to explain in Yiddish the evidence to the defendant.—Sanitary-inspector Harvey deposed to finding the defendant selling fish on a stall in Wentworth-street, Whitechapel, on the morning of Sunday, the 13th of September, and there were 50 bream, two hake, and some pieces of fish putrid. The fish was condemned the next day at this Court.—Mr. Cluer: And what did the woman say at the time?—Witness: She said she knew they were bad.—Mr. Cluer: Then she could speak English and understood what you said?—Witness: Quite, and, moreover, she and her husband were before this Court three years ago and fined £5 for selling putrid fish.—Mr. Cluer: Then it is quite clear that she understands.—These statements having been interpreted, defendant said she understood, but was deaf.—Mr. Cluer (who always speaks quietly): What about the previous fine?—Defendant: It is true.—Mr. Cluer: Then now pay double, for people are not to be poisoned in this way.—£10 or one month.

#### SERIOUS CHARGE AGAINST A BLACKHILL GROCER.

HENRY RULE was charged under the Weights and Measures Act with having unjust scales on his grocery premises at Durham-road, Blackhill.—Sergeant Tones said he served the defendant with a summons, but he was unwell, and could not appear.—Mr. James Laidlaw, inspector of weights and measures, spoke to visiting the defendant's shop and examining his weights and measures. He saw the defendant take a piece of lead from a scale which was already against the purchaser. Witness afterwards examined a pair of flour scales, and these were found to be a quarter of a pound against the purchaser.—Defendant, in answer to the charge, said he knew how the scales were, that he had not pinched his customers, and that he had a conscience void of offence.—The magistrates retired to consider their decision, and on returning said this was a serious case, and imposed a fine of £4 in the first case and £1 in the second case, with an order that the scales be put right and submitted to the inspector.

#### THE MARGARINE CRUSADE.

At Prescott, on Sept. 22, Sarah Davidson, grocer, Warrington-road, was fined £1 and costs for selling 1lb. of adulterated butter to Mr. W. J. Parkinson, inspector for the Royal Lancashire Agricultural Society.—At the same court Ellen Whitfield and Mary Glover, grocers, were fined 5s. each for selling unlabelled margarine, and John Waine £1 and costs for selling unlabelled margarine, and also for not wrapping the margarine in paper indicating that it was margarine.

ALLAN FRANCIS HASSARD, grocer, of Welwyn, was summoned, on September 21st, for selling margarine as butter, and also for that he, being a dealer in margarine, did sell the same without having wrapped it in a paper labelled as such, as required by the Act.—Inspector T. Johnson stated that on the 31st August he sent an assistant into the defendant's shop for a pound of butter, and when he found out what had been brought him he returned to the shop, drew Mr. Hassard's attention to it, and divided it into three portions, sending one to the public analyst, Mr. A. E. Ekins, St. Albans, who certified it to contain 90 per cent. of margarine.—Mr. Hassard, in defence, said his customers often asked him not to put their margarine into margarine paper, as they disliked it to be wrapped up in it, and, thinking that the girl Mr. Johnson sent to his shop was one of his regular customers, he put the margarine in the paper produced.—The Bench convicted, and fined Mr. Hassard for the two offences £1 19s. 6d.

#### FOREIGN *versus* HOME HEALTH RESORTS.

MR. C. A. OATES, Gestingthorpe Hall, Essex, writes:—

"Now that many people are preparing to leave England for the winter, I think it is well that they should be informed of the serious risk attending a visit to Madeira. Anyone who contemplates a sojourn in that lovely and fascinating island should make himself thoroughly acquainted with the condition of the water. Last season it was extremely bad, and I believe that nothing has been done since to improve it.

"Typhoid fever was very prevalent in the island during the winter and spring, and one of the English resident doctors is only now recovering from an attack, which shows that there is still danger. At the end of March, and in the beginning of April, there were four deaths from typhoid in less than four weeks among the English visitors. It must be remembered that in Madeira the visitors are few in number compared with those at such places as Cannes and Mentone. Most of the cases were persons who went out in excellent health, and were, probably, unaware of the awful risk



which they ran. One fatal case was certainly traceable to drinking a glass of water.

"I feel it right to call attention to this state of affairs. Naturally, no information can be obtained from the inhabitants, who are only too ready to hush up any facts which would depreciate their island in the eyes of the English."

Our Royal Family has set the fashion of fleeing to foreign pleasure resorts.

#### ANOTHER YEAST PROSECUTION.

At St. Columb, on Sept. 29, Jane Liddicoat, a grocer, of Summercourt, was summoned for having sold yeast adulterated with 20 per cent. of potato starch.—Mr. J. K. Martyn, a magistrate, said the defendant got the yeast from Truro, the people of Truro got it from Bristol, and they in turn imported it from France.—Superintendent Basset handed in a certificate from Mr. Benedict Kitto, public analyst for Cornwall, who wrote, "It has been argued that starch is necessary in this kind of yeast, but such is not the case. There is no good reason why pure yeast should not be supplied, and I can only regard the starch as an adulteration."—The Clerk said he saw a report that Justices Hawkins and Kennedy had held that baking powder was not an article of food. Yeast was very much on all-fours with baking powder. Although not an article of food itself, it was used in the production of an article of food. He doubted if the decision he had referred to would hold water.—Mr. Williams: If there is a flaw in the law we cannot go round it.—The Chairman said the Bench would give the defendant the benefit of the doubt.

#### WHISKY AND WATER.

W. LOCKWOOD, who keeps the Crown Inn at Cumberworth, was summoned at Huddersfield on Sept. 29, for having sold adulterated whisky and gin. The charges were brought by John Henry Bundy, of Barnsley, a West Riding County Council inspector of food and drugs. With regard to the whisky, a certificate from Mr. Allen, analyst, of Sheffield, was put in showing that the spirit was 41.7 degrees under proof. It should not have been more than 25 degrees, and 22.4 parts excess of water had been added.—Mr. C. H. Marshall, who appeared for the defendant, said that when Mr. Bundy purchased some of the whisky, he asked for whisky such as was sold to the public, and he produced a copy of a notice displayed at the inn stating that spirits sold in the establishment were diluted, but not beyond half-proof strength.—The magistrates fined the defendant £2, and the costs amounted to £2 1s. 6d. The summons against the defendant for having sold adulterated gin was withdrawn.

#### COLMAN'S MUSTARD.

At Chesterfield Petty Sessions, Elijah Smith, provision dealer, of Clay Cross, was summoned for having sold a quarter of a pound of mustard which was adulterated with 10 per cent. of wheat starch. The defendant said that his wife both bought in and sold out, and that he had nothing to do with the shop. The wife told Colonel Shortt's man that if the mustard were not genuine she had not adulterated it. The defendant was asked by the Bench if she cared to mention from whom she bought the mustard. Colonel Shortt, the inspector, said he had a note taken at the time, and it showed that the mustard had been bought from Messrs. Chandler and Woodhead, of Chesterfield, and it was Colman's mustard. The Chairman said, in the face of the reason which had been given to them, they would mitigate the penalty to 2s. 6d. and costs, which amounted to £1 0s. 6d. Perhaps "Dismal Jimmy's" father-in-law will pay this fine. We have seen no report of this case in the *Star* or *Morning Leader*. In both papers it appears to be *sub rosa*.

#### ADULTERATED PEAS.

At Prestatyn, on September 29, William John Williams, grocer, The Stores, was charged with selling green preserved peas which had been coloured with  $2\frac{1}{2}$  grains of sulphate of copper to the pound, and were injurious to health.—Defendant said he did not guarantee the peas, although he told the officer that the firm who had supplied the peas in bottle guaranteed that they were not injurious to health. Professional gentlemen said that not double  $2\frac{1}{2}$  grains of sulphate of copper would be injurious.—The Chairman: How long have you been selling them?—Defendant: I only sold one bottle.—Mr. J. Foulkes (a magistrate): Will the firm take the other bottles back?—Defendant: Yes.—The Magistrates' Clerk: And they should pay the fine and costs.—The Chairman said the bench had decided to fine defendant 10s. and 19s. 6d. costs, as it was the first offence. All the bench had to do was to administer the law. No doubt it was a hard case.

#### CORRESPONDENCE.

##### THE HEALTH OF BELFAST.

To the Editor of FOOD AND SANITATION.

SIR,—An accident of business took me to the York-road, Belfast, this afternoon. When there I took the opportunity of examining the ground now being filled up for building sites. I give an exact transcript of the notes I took of what I saw in the made up ground—viz., chaff, shavings, black decomposing stuff (name unknown), shavings again, paper and rags, a dead pig, meat tins, broken jam pots, miscellaneous rubbish, some curious filth, which I could not identify; black earth, full of vegetable matter, but with a strong musty smell. This stuff carts were still bringing in, as I saw one during my stay. I have no hesitation in saying that what I saw would not be fit to build upon before twenty years. From thence I went on, and saw men working at the formation of three streets—all these, so far as I could see, were being made in and through exactly the same sort of material. I made no inquiries as to ownership, and am reluctant to offend any one, but at this crisis one is compelled to speak out, and I have no hesitation in declaring that in my opinion the ground I saw will not be fit for building upon for twenty years to come.—I am, yours very truly,

F. W. LOCKWOOD.

16, Waring-street, Belfast, Sept. 21.

#### BATH AND ITS MILK METHODS.

To the Editor of FOOD AND SANITATION.

SIR,—In your valuable paper, dated the 12th ult., I read with particular interest a paragraph on page 441 referring to the then last meeting of the Bath Sanitary Committee, which you will observe is as follows:—

"A milk-seller, named Charles Coates, Lower Bristol-road, appeared before the committee with respect to a sample of milk which he had sold to the inspector," etc.

Could you in your next issue inform me upon what authority the committee acted in having Charles Coates before them, and how he was summoned to such meeting, or notified that his attendance was necessary before that tribunal, and oblige,

A CONSTANT READER AND ENQUIRER.

[We are unable to explain upon what authority the Bath Sanitary Committee acted. It has grown into a practice with sanitary committees in some towns to convey an intimation to persons whose samples have proved to be of inferior quality or adulterated, and if such person be requested to appear before the committee he considers it wiser to do so and suffer a reprimand rather than be prosecuted. This stretching of a committee's power is really done to burke the Acts, and usually by committees of shop-keepers.—Ed.]



## ANSWERS TO CORRESPONDENTS.

## ELLIMAN'S EMBROCATION.

T. C. S.—We think you mistake this journal. Practically you ask that we should assist you to palm off some concoction upon the public as "Elliman's" preparation. If you want to trade, do it fairly and squarely "off your own bat." The embrocation you might find useful could be made of either of the following formulas:—

- |                                   |                       |
|-----------------------------------|-----------------------|
| (1.) White of egg ... ..          | 2 parts.              |
| Turpentine ... ..                 | 8 parts.              |
| Crude pyroligneous acid ... ..    | 50 parts.             |
| Water ... ..                      | 50 parts.             |
| Spirit (methylated) ... ..        | 60 parts.             |
| (2.) Oil Turpentine ... ..        | $\frac{1}{2}$ -ounce. |
| Oil thyme ... ..                  | $\frac{1}{8}$ -ounce. |
| Oil amber crude ... ..            | $\frac{1}{8}$ -ounce. |
| Soap ... ..                       | 130 grains.           |
| Caustic soda ... ..               | 10 grains.            |
| Water, quantity sufficient ... .. | 1 pint.               |

## EAST LONDON'S SEMI-FILTERED SEWAGE AND DRAINAGE.

At the meeting of the Hackney Vestry on Sept. 23, the Sanitary Committee submitted two reports from the Public Analyst on samples of water which had been supplied to the district on August 6 last, and which had been taken by the medical officer, Dr. J. King Warry. The samples had been taken in consequence of complaints. The first was from a drinking-water cistern in Downs-road, Clapton, and, after setting out the analysis in detail, the analyst remarked: "This water is not satisfactory in its character. The organic matter is much higher than is desirable in a drinking water, and indicates pollution, while the suspended matter indicates that either the cistern was in a dirty condition or the water was delivered imperfectly filtered." In this case the cistern had been thoroughly cleaned a week before the sample was taken. The other sample was taken from the water-main in Exmouth-place, and of this the analyst remarks: "The organic contamination in this water is much higher than usual in a filtered water, and indicates imperfect filtration; it is of vegetable origin." Commenting on this report, Mr. Hulland, the chairman of the Sanitary Committee, said the water was rushed through the reservoirs without being properly filtered. If water of this kind was supplied, they must not be surprised if there was a large amount of sickness. Mr. J. B. Kyffin said the company were delivering water largely impregnated with sewage, which came down the river and went direct to the consumer in the same condition. It was resolved that copies of the analyses should be sent to the East London Water Company, the Local Government Board, the London County Council, and the borough members.

"Professor" Smith somehow or other is silent about this. Has the induration of the superficies of the cuticle of the professor of the "Smitheries" got an ache?

## LEAD PIPES AND POISONING.

A FAMILY who recently returned home after a month's absence the next day found three of their number suffering from symptoms which their doctor pronounced to have every appearance of lead poisoning. Careful investigation into the possible causes of the trouble led to the discovery that the sufferers had been drinking water which had been stagnant in the supply-pipe for a month, and had thus become impregnated with sufficient lead fully to account for the mischief.

A PROPOSAL is now under the consideration of the Privy Council with a view to restricting the sale of carbolic acid.

## WHY, WHEN, AND WHAT WE EAT.

By SIR CHAS. A. CAMERON,

Medical Officer of Health, Dublin; Public Analyst; etc.

(Continued from page 466.)

UNDER the influence of the mysterious force which abode in the sunbeam, the living organism was woven together. Vegetable mechanism produced starch, sugar, and thousands of other products. How did it do that? The seed contained little or no force. It contained, however, the initial force, and under the influence of that the seed was developed until the plant was seen. But what was the force by which this wonderful force was effected? It was the great force 95 millions of miles away. These forces were forces which came from the sun.

The plant was only a mechanism. It could neither originate nor destroy force. But it could divert into new channels and could accumulate. They knew that matter was not destructible. That was an axiom that was well known. But it was only in comparatively modern times that they had been able to prove and demonstrate that the forces of nature were equally indestructible. Every particle of matter that came into existence by the first great creation remained undiminished to the present day. And so it was with those forces which governed these mineral matters—they also remained intact. But they might be changed one into another. Just as they knew in the case of the life of a plant mineral matter could be metamorphosed into organic matter, and assume shapes highly different from that in which it existed—as air, as water, and as soil, so the forces of nature could not be destroyed, but they might be converted one into another. And it was the boast of men in this age of civilisation and scientific progress that they could control, by Divine inspiration, these great forces of nature—that they could accomplish, in fact, changes in matter which would not materially take place. What were these forces of nature? Heat, light, electricity, magnetism, cohesion, vital force, all convertible one into another.

Animals required the constant use of energy or force. Energy or force simply meant the movement of matter. And this movement of matter was necessary to the life of animals: but it was not necessary to the life of a plant. Plants were stationary organisms, but animals were not stationary organisms—except, perhaps, oysters, or something of that kind, and even their food must be brought to them organised—and animals must roam in quest of their food, or must work for their food, and so were in a different position from plants.

In order to do this, they must have control of energy; and the great function of the vegetable kingdom was to accumulate this energy and place it at the disposal of the animal kingdom. Therefore, all the time the plant grew larger and larger, and accumulated stores of food for animals, it also accumulated stores of energy derived from the sunbeam. That vegetable food—whether first organised into animal organisms of the lower kind, or whether directly consumed by man—directly or indirectly, this vegetable matter passed into the bodies of animals and was disorganised there.

And what became of the forces contained in the vegetable matter? They must remember that vegetable matter was a reservoir of energy and force; and whenever the vegetable matter was reconverted into its original condition of carbonic acid and water, then the force which had been expended by the sun's rays was again set free. They knew that by that marvellous correlation of the great forces of nature—the conversion of heat into light, and light into electricity, and so on—the force stored up in the food became again set free—set free in the form of heat and light.

(To be continued.)



To the Grocers, Provision Merchants, Pastry-Cooks, Confectioners, and  
the Public of the United Kingdom.



# "LE DANSK"

## MARGARINE.

▲ Perfect, Pure, and Wholesome Butter Substitute, for Table use  
and every description of Pastry. In Colour, Flavour, and Texture,  
equal to Best Brands of Butter, costing one-third less. This unique product stands far above  
other makes, and has received honour everywhere. Has the largest sale in the world!

**"THE LANCET"** (the leading Medical authority of the world) says:—

**"It is of pure and excellent quality."**

**Monsieur ARNAUD** (Chef to his Grace the Duke of Westminster) says:—

"I hereby certify that **"LE DANSK"** is equal to butter for pastry making in the way  
of taste and lightness, and superior to same in giving it a rich colour. I can testify to the above, having  
made full experiment.

(Signed) S. ARNAUD."

### AGENTS FOR THE SALE OF "LE DANSK" IN SEALED BOXES

Alexander, 66, Mount Grove-road, Highbury.  
Ambrose & Son, General Supply Stores, Loughton, E.  
Bayly's Stores, 16, Seymour-st., Euston-sq., N.W.  
James Bartlett, 82, Chalk Farm-road, N.W.  
John Collier & Co., 120 and 122, Bow-road, East.  
W. J. Cartwright, The Stores, and 6, Chichele-  
parade, Cricklewood, N.W.; also at 6, Station-  
parade, Willesden, N.W.  
Crisp & Co., 67-83, Seven Sisters'-road, N.  
W. H. Curry, 40, High-street, South Norwood.  
W. H. Cullen, 2, Pond's-buildings, High-road,  
Lower Clapton.  
W. H. Dent, 297, Kennington-cross, S.E.  
Dowling & Son, 20 & 30, King-st., Tower Hill, E.C.  
The Crystal Palace Supply Stores, 80, Westow-hill,  
Upper Norwood. Edmonds & Co., proprietors.  
Rowland Ellis, 119, High-street, West Norwood.  
J. Everett & Co., Everett's Stores, St. James's-  
street, Walthamstow, E.  
T. G. Edwards (successor to Thomas Gibbs), 54,  
Upper Baker-street, W.  
Edwards & Son, 68, Marchmont-street, W.C.  
J. Frear & Son, 1 & 2, Algenon-terrace, Hendon,  
N.W., Victoria-road, Hendon, N.W., and Burnt  
Oak, near Edgware.  
W. & G. Firth (late H. Ward & Co.) 272, High-  
road, Chiswick, W.  
James Grogan & Co., 173, Blackstock-road, N.,  
and 1, Broadway, Highbury.  
D. A. Guy, 4, Formosa-st., Warrington-crescent, W.  
T. W. Hawes, 11 & 13, High-st., Camden Town.  
Harrod's Stores, Limited, Brompton-road, S.W.  
F. Holland, 10, Grove-terrace, Holland-park, W.  
H. Hetherington, High-street, Woodford.

Jones Brothers, 348 to 366, Holloway-road, N.  
R. Jones, 32 and 33, Chrisp-street, Poplar, E.  
C. Kibbie & Co., 49-57, Broadway, Deptford, S.E.  
F. H. Kerry, 20, Bellevue-rd., Wandsworth Com-  
mon, S.W.  
John Kettle, 58, Woodgrange-road, Forest Gate.  
The Kensington Stores, 64 to 74, Hammersmith-  
road, W.  
Leverett & Frye, Ltd., 1 & 2, Strathavon-terrace,  
Hendon, N.W.  
Leverett & Frye, Ltd., 31, High-st., Islington, N.  
Leverett & Frye, Ltd., Competitive Stores, 111,  
High-road, Streatham, S.W.  
Leverett & Frye, Ltd., Finchley-road, N. Finchley.  
Leverett & Frye, Ltd., 86, High-street, Notting  
Hill, W.  
Leverett & Frye, Ltd., 35, Upper George-street,  
Edgware-road, W.  
Leverett & Frye, Ltd., 6, Castle-ter., Belvedere,  
Kent.  
Leverett & Frye, Ltd., 88, Peckham-road, Peckham,  
S.E.  
Leverett & Frye, Ltd., 281, Barking-rd., Barking, E.  
Leverett & Frye, Ltd., 133, Bow-road, Bow, E.  
Leverett & Frye, Ltd., The Pavement, Wanstead, E.  
T. Lighton, 98, Brixton-hill, S.W.  
H. Mose, Whitehall Parade Stores, 11-19, Arch-  
way-road, N.  
J. Mercer, 24, Lordship-lane, East Dulwich.  
Nichols & Fisher, 286, Elgin-avenue, Maida-vale,  
and 173, Ladbroke-grove, W.  
G. S. E. Newcombe, 78, Westow-street, Upper  
Norwood.

George Olsen, Chingford.  
Thomas Pelling, Broadway, Barking, E.  
G. H. Page, 43, Castle-street, Oxford-street, W.  
Parker's Stores, 112, Norwood-rd., Tulse-hill, S.W.  
Jno. Phillips, 12, Circus-rd., St. John's Wood, N.W.  
A. Rake, Craven-passages, Strand, W.C.  
J. W. Robey, 204, Bow-road, E.  
Sargeant & Co., Park Hall Stores, High-road, E.  
Finchley  
Sherwin & Wallis, 136, Seven Sisters'-road.  
J. Sitton, 37, London-road, Southwark.  
Charles Savage, 216, 218, 220, and 414, Kennington  
Park-road, S.E.  
A. C. Smith, 134, Petherton-road, Highbury.  
The Supply Co., 15-17, Dartmouth-rd., Forest Hill.  
Joshua Thomas, 56 & 58, Lamb's Conduit-street,  
Holborn.  
Tower Hamlets Co-operative Society, Ltd., 436  
and 438, Commercial-road, E., 70, Brunswick-rd.,  
Poplar, E., 227-229, Bow-road, E.  
H. Turtle, 244, Mile End-road, E.  
P. Thorn, 22 & 24, Greyhound-rd., Hammersmith,  
W.  
Wakefield & Sons, 140, High-road, Streatham,  
Gleneagh-road, Streatham.  
Wahnrow's Stores, 38, Store-street, Tottenham  
Court-road.  
W. Whiteley, Queen's-road, Westbourne-grove  
Williamson and Sons, 63-67, High-st., St. John's  
Wood, N.W.  
H. W. Wood, Temple Stores, Commercial-road,  
Stepney, E.  
A. Waters, 29, Paddington-street, W.



# BOVRIL

**IS THE VITAL PRINCIPLE OF PRIME OX BEEF,  
FROM CATTLE REARED IN AUSTRALIA AND SOUTH AMERICA.**

ANIMAL FOOD offers a means of strength and stimulus not furnished by any other aliment, and the perfect assimilation of nutritious food is an essential condition of perfect health, but the high-pressure life of the present age demands an effective stimulative nourishment, taking little time to prepare or consume, yet not detrimental to the digestive organs, hence the introduction of Meat Extracts, Meat Essences, &c.

But BARON LIEBIG, the great German chemist, discovered and publicly declared on Nov. 11th, 1865, the unsuitableness of these preparations as resuscitating agents or as food in any direct sense. As he truly says:—

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# Food & Sanitation

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## Food and Sanitation.

SATURDAY, OCTOBER 10TH, 1896.

### ON HERMITS AND THE LIKE.

SAYS the *Star*, under the caption, "Fifteen Years in Bed": "Fifteen years ago Silas Huffmann, a New Jersey man, made a vow never to leave his bed again. He lay down a strong, healthy man of barely middle age, but in fifteen years they carried him out, feet foremost, a mere skeleton, whose white hair and beard—never trimmed for fifteen years—enveloped him like a winding sheet, while his nails had grown so long that they had twisted spirally in hideous curves."

Yorkshire produced long ago even a superior filthy maniac, whose folly was detailed in Baring Gould's "Yorkshire Oddities." This variety of insanitary nuisance is so poor an imitation that he would be, were New Jerseyites really civilised, washed and put to work;

and if he persisted in his filthy, ego-maniacal vow he should be lethal-chambered. We cannot blame New Jersey much, for we are far too tolerant of nuisances in this country, which explains why we are afflicted with ego-maniacal monochromes in snuff-colour, like George Bernard Shaw, preaching mountebanks, who ought to cut their hair, like Dr. Joseph Parker, and notoriety-at-any-price-hunters like the Rev. Price Hughes.

Just now some of this type of ego-maniac are howling that we should fight Turkey for the benefit of Armenians—as filthy as Silas Huffmann. If all the misery and oppression existing in Great Britain and Ireland were removed, and our own Augean stable cleansed, we might say something for knight-errantry against the Turk, but would the Price Hughes's and that ilk embark in that knight-errantry? Not if it cost them a copper or a skin abrasion. We are tired of these frothy, notoriety-hunting humbugs. In their way they are victims of the same disease as Silas Huffmann—an affliction which Dickens described so faithfully in his hermit of "Tom Tiddler's Ground":—

"What is a hermit?" asked the traveller.

Receiving no answer, the traveller said: "I'll tell you what I suppose it to be—an abominably dirty thing."

"Mr. Mopes is dirty, it cannot be denied," said the landlord.

"Intolerably conceited."

"Mr. Mopes is vain of the life he leads, some do say," replied the landlord as another concession.

"A slothful, unsavoury, nasty reversal of the laws of human nature," said the traveller; "and for the sake of GOD'S working-world and its wholesomeness, both moral and physical, I would put the thing on the treadmill (if I had my way) wherever I found it—whether on a pillar or in a hole, whether on Tom Tiddler's ground or the Pope of Rome's ground, or a Hindoo Fakeer's ground, or any other ground."

It is the same kind of sickening vanity as that which caused Dickens's Hermit to overawe visitors with the novelty of his filth and his blanket and skewer which produces Huffmanns, Whistlers, Shaws, and the horde of ego-maniacal curiosities who to-day weary the world with their silly posturings and new names for old humbugs. We do not know which is the worst, the hermit with his gospel of filth, beard like a winding sheet, and nails twisted in hideous spiral curves, or the posturing parson, painting and musical quacks, and the Gallias, Manxmen, and Heavenly Twins horde of paper spoilers. The hermit at least keeps his vanity and filth to himself, but the other ego-maniacs get their believers, and spread their ignorance, false art, musical lunacy, or pornographic rot broadcast. After all, the hermit may be the least harmful, and we might make a good bargain by swopping some of our nuisances for even so repulsive a one as Silas Huffmann.

### EXCESS WATER IN BUTTER.

IRELAND has only recently awoken to the knowledge of the ruin the excess water game has worked to its butter trade. Better late than never, every well-wisher of Irish industries will say. We strove hard three years ago to arouse Ireland to the folly of the practice, and are sorry our efforts have not borne earlier fruit. It is not, however, as yet, a case of locking the stable door after the horse has been stolen. There should be, and can be, a better future for honestly-made Irish butter than at present. As we have over and over again proved, Danish butter is a fraud and adulterated, as is the bulk of foreign butters we import. All the greater reason, therefore, why Englishmen, Irishmen, Scotsmen and Welshmen should do all they can to keep the good name of home produce above suspicion. In each country we are making progress, but it is slow, which is only natural when our system of Government is one



by promoted University persons, or lawyers, instead of practical business men. Homer and Bishop Butler, along with many other charming myths and superstitions, are very well in their way, but it is a curious satire on statesmanship that such trivialities should be beslaved with praise, whilst English, Irish, Scotch and Welsh farming was going surely to destruction, and thousands of those dependent on the land for a living were brought to starvation. It might be better to give our Salisburys, Gladstones, Harcourts, Asquiths, and others of the superior persons a rest, and try what a Ministry of common-sense citizens would do for the United Kingdom's trade. We are a nation of shopkeepers, and we have to live by our shopkeeping, and these Salisburys and Gladstones know nothing more of shopkeeping or trade processes than is stuffed into them by crammers who know about as little as themselves. It is out of these crammers that we get Sir Algernon Wests and the like, with their advice to abolish the Malt Tax and other foolish legislation which have worked such terrible mischief to native industries. It is this conservation of cultured foolishness which has let other countries seize so much of our trade, left us at the mercy of foreign countries for our food supply, honeycombed Ireland with misery and discontent, and filled English towns with unskilled unemployed labourers driven from the land they tilled by causes which true statesmanship in place of sham statesmanship could have removed. Straws like the following show that the wind is blowing in a way to alter these things, but it is a slow wind. Three years ago this little object lesson of why Irish butter has been so much ousted by foreign butter could not have happened, so we are reaching little by little the truth that no industry can be careless of its honour as no woman can be of her virtue:—

At the Kilrush Petty Sessions Court, an important prosecution for adulterated butter came before their worships. The Magistrates presiding were: Messrs. Hector S. Vandeleur, D.L., J.P. (in the chair), William Vandeleur Reeves, J.P., J. F. O'Doherty, J.P., A. M. Harpur, R.M., and F. M'G. Eagan, J.P. Mr. Jelf occupied a seat on the bench, Mr. J. Rolleston, D.I.R.I.C., was also present. A farmer, named A. O'Neill, from Gowenass, near Kilrush, was charged with exposing for sale in the Kilrush Butter Market a firkin of butter containing an excessive percentage of water amounting to adulteration.—Mr. James Gaffney, solicitor, Limerick, said he appeared to prosecute in this matter and tell their worships at the outset that it was one of the grossest cases of butter adulteration that ever came before a Bench of Magistrates. He would appeal to the Court, after they had heard the evidence, to inflict a severe penalty in the interest of the farmers themselves. The penalty would, no doubt, affect the poor woman who was defendant, but it would prove beneficial to an industry which the Irish farmers themselves were doing their best to destroy.—Mr. Hilliard, solicitor, Kilrush, appeared for the defendant.—Sergeant Tuohy, R.I.C., Kilrush, inspector under the Food and Drugs Act, was examined. He stated that he was stationed at Kilrush. He said he purchased a pound of butter from the defendant in the public market at Kilrush. He informed defendant it was for analysis. In the usual way he gave her one portion, retained another himself, and forwarded the third part to the public analyst. He now produced and handed in the certificate received from Sir Charles Cameron, which set forth that the butter contained 27.26 per cent. of water. Sixteen per cent. of water was the maximum allowed.—Mr. Hilliard: Did Mrs. O'Neill volunteer any explanation or make a statement?—Witness: No, sir. I did not ask for any information, but did my duty as inspector.—Mr. Hilliard: Your worships, I take it that the commission of inquiry into this question of butter adulteration came, as far as I know, to the conclusion that 20 per cent. was the maximum allowed of water.

What I ask you to do in this case, where there is an excess of 7 per cent. of water, is not to deal with same as a case where there would be only 23 per cent. To be sure, there must be a fine in the present instance, and what I want to argue is that you should take it as a case in itself, and inquire into the particular circumstances as to how this particular butter was made and manufactured. You may remember that the 20th of August, the date on which the butter was made, was hot, particularly so, and it was impossible almost to make butter at all. As I will prove to you, the defendant was compelled, in consequence of the heat, to put butter for a day and a-half in water before she was able to work it. These are the elements I wish to mention, and that should be taken into consideration.—Mrs. O'Neill, sworn, deposed to a confirmation of the statement made by her solicitor. The day she was making the butter it was so hot that she was compelled to leave it in the water for a day and a-half before she could work it. It was not her fault that so much water got into the butter.—Cross-examined: Tell me, madam, how many cows have you?—Witness: Six, sir.—And you made all the firkin of butter yourself.—Witness: No, sir; I had partners.—Solicitor: So I thought. The old method. Tell me how many had you with you in making up the butter?—Witness: No one but myself.—Mr. Gaffney: You have sworn that nothing was done to the butter. Come, tell us what happened to the quantities given by your other partners? Nothing.—Only that you did nothing to your own? Yes.—How many pounds were your portion of the firkin? Eight pounds, sir.—You sold the firkin in the market?—Witness: Yes.—You patted together all the qualities supplied by the nine partners?—Witness: Yes, sir.—Do you know what brine in the butter means?—No, sir.—You do not know what brine means?—I do not.—Mr. Gaffney: Mr. Chairman, I may tell you that the authorities at Manchester have inflicted very heavy penalties in cases of butter adulteration where the percentage of water was considerably less. I now ask you in the interest of the farmers themselves and this industry to inflict a punitive penalty in this gross case. It may be disastrous to this poor woman, but it is absolutely necessary in this scheme of fraud, so as to prevent it and stamp it out in future in Clare.—Mr. Hilliard: The magistrates at Limerick only inflict fines of 10s. and 15s.—Mr. Gaffney: In Manchester, where butter was found adulterated with 20.53 per cent. of water, a fine of £3 and costs was imposed, as I see by the newspaper. In the present case the adulteration is greater. We have at home a great difficulty in getting the magistrates to inflict deterrent penalties.—The Chairman: We have come to the conclusion this is a most serious case. We cannot close our eyes to the fact that Irish butter is looked on with a great deal of suspicion in Liverpool, London, Manchester, and elsewhere. This wretched business of adding water to the butter is proving most injurious to the farmers themselves. But as out of evil comes good, we hope that this will be a warning to the farmers. We order that the defendant be fined 40s. and costs.

How far the good repute of native produce has been destroyed by excess water and careless making the following object-lesson reveals:—

#### "ENGLISH V. DANISH BUTTER: LINCOLN GUARDIANS' OPINION."

"The Lincoln Board of Guardians Contracts and Supplies Committee have recommended that for the next three months Danish butter be obtained.—Mr. Blaze remarked that the English butter that had lately been supplied at the house had not been at all satisfactory. The Danish butter could nearly always be relied upon as being good, and though he was sorry to go against his own country he felt it his duty to move that the recommendation of the committee be adopted. Complaints were being made all over the country as to the



quality of the English butter, and if the farmers would not adopt a better system than they had at present their custom would be certain to drop.—Mr. Codling, in the course of a rather lengthy discussion on the matter, said he regarded the proposal as one of the greatest reflections on English farmers that had ever been brought forward at that board. It seemed very strange to him if they could not get good butter in an agricultural district like that. He did not like the idea at all.—The Chairman: Neither do I.—Canon Croft remarked that something like £40,000,000 went out of the country every year for butter and eggs alone. The Danish farmers indeed were beating the English farmers out of their own markets, and it was the English farmers' own fault. The Danish butter was always good, and it was always the cheapest to buy.—In the end the proposition was carried, eight voting for it and four against, several remaining neutral."

#### HOW TO ENCOURAGE ADULTERATION AT WHITEHAVEN.

IF we were Superintendent Hope or Inspector Sanderson, or Whitehaven folk, we should find ourselves confronted with a curious problem. It would run something after this fashion: If a person who has been previously fined for watering milk is fined £2 for a second offence, why should a publican be fined £3 for her first offence of watering whisky? This was done at Whitehaven by the same magistrates on the same day. There, of course, may be those who would conclude that the magistrates care more for whisky than milk, but we have too high an opinion of Nupkins as he is to give credence to such aspersions on the majesty of Whitehaven law. Or they may be all bachelors, and therefore careless whether Whitehaven infants get their full nutriment or an attenuated imposture, but we have no proof of this. All that we know of a certainty is that they are magistrates, and the following illustrates how wisely and well they serve Whitehaven:—

##### MILK: SECOND OFFENCE, £2.

"AT Whitehaven, Archibald Beattie, 40, milk-seller, Hugh-street, Bransty, Whitehaven, was charged with an offence against the Foods and Drugs Act on the 9th ult.—Inspector Sanderson deposed that on Wednesday, the 9th ult., at seven p.m., the defendant was selling milk in Fox-lane, when witness purchased a pint of new milk for the purpose of analysis by the public analyst. When he was about to pour the milk into the bottle, defendant said, 'Hold on, Inspector. It has been raining very hard. No doubt rain has got into the measure. If you give me that back I will give you another pint of milk.' I said, 'To be fair with you, I will give you it back on condition that you will give me a pint out of the same tin. As you understand it is a purchase for the public analyst.' Defendant replied, 'It is all right,' and thereupon gave him a pint of milk out of the same can.—By Mr. Chapman, who represented the defendant: It had been raining before witness took the samples, but had ceased to rain when he was taking the samples. It was a showery day; defendant did not point out to him that rain water was running into the bottles when he was taking the samples. He took them in a window recess. Defendant did not say, 'How can the milk help getting water in it, when it is raining like this?'—Supt. Kelly produced the report of the analyst, which showed that water had been added to the extent of 10 per cent.—For the defence, Mr. Chapman said he was not disappointed with the analysis, but the point was how the water was added, the circumstances under which the milk was taken: the rain was pouring down like torrents. His instructions were that the rain was pouring down at the time, and under the circumstances an honest man might be implicated. The window where the sample was taken would be no protection on such a

day as this, while natural causes had been known to account for 8 or 9 per cent. of water. He contended that the circumstances did not justify a conviction.—Defendant said he remembered this sample being taken. It was raining hard at the time, and had been a pouring wet day, rain falling all the afternoon. There was a little wind. He took the two samples at the window sills. Everything was dripping with wet, and he told the inspector of it. The window sill was absolutely no protection. Witness milked the seven cows himself, and siled the milk. The milk was never out of his own custody, and had been in no way tampered with.—By Mr. Superintendent Kelly: Inspector Sanderson was very slow in getting the milk into the bottles. He had been convicted for watering milk on a previous occasion, and was fined £2. He was away from home when that occurred.—By Mr. Chapman: Witness was wet through on this occasion.—The Bench decided to fine the defendant 40s., including costs.

##### WHISKY: FIRST OFFENCE, £3.

"At the Whitehaven Magistrates' Court on Thursday, Mary Frear, 67, innkeeper, Distington, was charged with an offence against the Food and Drugs Act, on the 21st August.—Mr. Atter appeared for defendant.—Supt. Hope, of Workington, stated that he called at defendant's (the Globe Inn) on the day named, and purchased a pint of Irish whisky. He explained that it was bought for the purposes of analysis by the public analyst. The result of the analysis was that the sample had been adulterated 36.2 degrees under proof, being reduced 11.2 degrees below the legal limit.—By Mr. Atter: Constable Williamson was with him at the time he got the sample. He did not see the notice produced in the bar. Police-constable Williamson told him that there was no notice issued at this house.—Mr. Atter read the notice to the effect 'that all spirits sold at that house were diluted with water, and that no alcoholic strength was guaranteed.'—P.C. Spedding proved the delivery of the whisky to the analyst.—Mr. Atter said Mrs. Frear had been at the house for about 40 years. She obtained the whisky from a Belfast firm, through Mr. Robert Salkeld, of Distington, and had had this cask for 18 months. As it was kept in the cellar, which was damp, this accounted for six or eight degrees loss of strength, while several degrees were also lost on account of age. She was also told to put half-a-gallon and half-a-pint of water to a gallon a whisky, and this had been done just before Mr. Hope made his purchase. Then there was the question of the notice produced. On decided cases, if the notice was exhibited, there could be no conviction. Mr. Atter quoted cases in support of this view.—He called defendant, who said she was 67 years of age. She had been at the Globe for over 40 years. She got the whisky from McKnight and Dickson, of Belfast, and procured a cask of 30 gallons. She had had it for about 18 months. It was to be 25 over proof. She kept it in the cellar, which was rather damp. Mr. Steward's whisky (she previously was supplied by Messrs. Fisher and Steward) would take half-a-gallon of water to a gallon of whisky, and Mr. Salkeld said this whisky would take half-a-gallon and a pint of water to a gallon of whisky. She had had the notice produced as to no guarantee being given up for about four years. It was exhibited so that anyone could see it, and was on view on the day that Mr. Hope called. This notice was sent by Mr. Iredale, of Workington. She never put more water in the whisky than she was ordered to do.—Mr. John Borrowdale Steward, jun., said he had not examined the cellar, but from what he knew of the place it must be damp.—Ada Frear, daughter of Mrs. Frear, who is very hard of hearing, said she recollected serving Supt. Hope with Irish whisky. He would not have the best. (Laughter.) The notice produced was hanging in the bar when she served Supt. Hope. No one could help



seeing it, as it was not hid. It was right opposite the bar.—Isaac Taylor, driver for Mrs. Frear, said he had been engaged by her for two seasons, and the notice had always been there. Mary Jane M'Sherry, the servant girl, was called, and proved that the notice was regularly exhibited. It was just at the side of the wall.—Supt. Hope, in reply to Mr. Fox, said he made a practice of looking for these notices, and looked for this particular one. As an evidence of that he went to a house before this one, and came out without making a purchase when he saw the notice.—The Bench retired to consider their decision, and on their return the Chairman said the Bench had decided to adjourn the case for a week for the production of P.C. Williamson, and they also thought it would be desirable to have a plan of the house.—Some question arose as to whether it would not be preferable to have the case settled that day, and Superintendent Hope said he could have P.C. Williamson there in an hour.—This was agreed to, and subsequently the case was resumed, when P.C. Williamson was called. He stated that he accompanied Superintendent Hope to the Globe Inn, at Distington. Previously he called at the Hope and Anchor Inn, but witness did not go in with him. He did accompany him into the Globe, and went into the bar. Miss Frear supplied the whisky. Witness saw no card exhibited that day, as going in at the door it could not be seen. But if they went in behind the table they could see the card at the side of the table if they were sitting. He had seen the card at other times, but nothing was said about it that day. Witness did not see the card that day. He did not see how Superintendent Hope could have seen the card. If a customer went in to sit down they would see the card, but if they stood they would not see it.—The Bench again retired to consider their decision, and on their return the Chairman said the Bench considered the case proved, and fined defendant £3, but the licence was not to be endorsed."

Is it not about time the "publicans' notice" was abolished? The law fixes the limits for spirits but anyone who cares to take the trouble to exhibit a "dilution notice" can laugh at the law and sell water at spirit rates without risk of punishment. This and like legal absurdities are regular pitfalls for traders and an imposition on the public, but magistrates never say a word against them. Disproportionate penalties or encouragement of adulteration are apparently easier brain work for our J.P.'s.

#### A VERY CURIOUS MILK CASE.

THE average person who says, "let us have pure milk," will glean from a case at Cleator Moor recently a few of the difficulties which hedge the pure milk question.

Joseph Slee, farmer, New Monkway, Hensingham, was summoned for an offence against the Food and Drugs Act.—Police-Inspector Steele deposed that he bought a pint of milk from the defendant's daughter, who was in charge of her father's milk-cart, on the 1st inst., told her it was for analysis, and divided it in her presence into three samples in bottles, which he sealed and marked, and he left one of the bottles with her.—Police-Superintendent Kelly said he sent one of these samples to the public analyst for analysis, and he put in Dr. Hellon's certificate of analysis.—The Clerk read the certificate, which was that the sample contained non-fatty solids, 7.7; fat, 3.75; water, 85.55; and he was of opinion that the milk contained added water, 9.4 per cent. He based this opinion on the fact that the milk only contained 7.7 of non-fatty solids, whereas ordinary milk contained at least 8.5 of fatty solids. No change had taken place in the condition of the sample that would interfere with the analysis.—Mr. Chapman, who appeared for the defendant, said he was sure the Bench would bear in mind that a charge of this kind coming against a man for the first time—a man

with a good business, respected by his neighbours—was a matter of considerable magnitude. His defence was simply that the county analyst had fallen into one of those errors to which all persons were liable, even experts. The sample given to defendant's daughter was sent by the defendant to Mr. Archibald Kitchin, Whitehaven, who analysed it, and certified that it contained solids, not fat, 8.8; fat, 5.12; and its specific gravity was 1.031; and that these results indicated a pure milk of excellent quality. The sample was slightly sour. That (said Mr. Chapman) was only to be expected, as Mr. Slee was away at the time of the occurrence, and it was not till his return that the sample was sent to Mr. Kitchin.—Mr. Kitchin, called as a witness, said he received the sample on the 10th inst. It was marked 'B' and sealed with red wax. He handed in his certificate as given above. In reply to the Bench, Mr. Kitchin said the sourness would not affect the analysis in the least. The sourness was not to that extent. He did not know the length of time the sample had been kept. Had he known it had been kept for ten days he would have been surprised that there was not more acidity. Having taken a portion of the sample for analysis, he put something in the rest of it, which would preserve it and keep in exactly the same condition. It was difficult to say whether the bottle had been newly sealed. The impression of the seal was very indistinct. It was nothing like so distinct as the sealed impression on one of the other bottles now in Court.—Mr. Supt. Kelly: Could you tell whether the seal had been broken or not?—Witness: It was difficult to tell.—Mr. Kelly: You would not like to swear whether it had been broken or not?—Witness: No.—Mr. Fox: Were the three bottles sealed by Inspector Steele?—Mr. Kelly: Yes.—Mr. Fox (to witness): Can you make out the design of this seal?—Witness: Yes.—Mr. Fox: Could you make out the design of the seal of the bottle you received?—Witness: No.—By Mr. Kelly: I cannot explain the difference in the amount of fat.—Mr. Kelly: It would not become any fatter, I suppose, with being in the bottle ten days?—Witness: No.—Mr. Chapman suggested that the sealing-wax might have been put on the three bottles at once, and one after the other had been sealed. In the open air the last bottle sealed would be coldest and have the faintest impression. No suspicion had suggested itself to him of his client having tampered with the seal, or he (Mr. Chapman) would not have been there.—The Clerk: We get suspicious at the police court.—Sarah Slee, wife of the defendant, said she had charge of the milk that morning until it left in the cart, and the milk was never tampered with in any way. She received the sample in the bottle from her daughter and put it on the chimney-piece in a cool parlour, where it remained till her husband came home from Scotland, and it was then sent to Mr. Kitchin for analysis. It was never interfered with in any way. Her husband had sold milk for 16 years and had never had a charge of this kind against him, although the police had taken and tested it before.—Mr. Chapman proposed to leave the case there and not call Mr. Slee, who could not give any further evidence than his wife had given.—Mr. Fox said he would like to know when the defendant came home from Scotland.—The defendant went into the witness box, and in reply to the magistrates, said he thought he returned either on the 8th or the 9th.—he was not sure which. He thought it was a Wednesday. He was away in Scotland buying sheep.—By Mr. Kelly: I went away to Scotland on the Saturday afternoon. He could not tell the date. He was away four or five days.—Mr. Kelly pointed out that in that case he would be at home on the 1st, if he was back on the 8th or 9th.—Witness said he could not remember the dates.—Were you away two Sundays?—Yes, I believe I was.—How could you be away two Sundays if you were only four or five days?—Well, I might be away rather more



than a week. I went on the Saturday and came back on the Wednesday.—Now, be perfectly sure?—Well, I can't be sure.—Mr. Fox: It is not usual for a farmer who goes to buy lambs to be away four or five days.—Defendant: No, but suppose you had some friends to stay a few days with?—Mr. Kelly: Where were you when this sample was taken? At Carlisle.—What were you doing at Carlisle? That's my business.—You decline to say?—Yes, for reasons.—Were you not back for eight days?—Well, as near as I can say; I can't say for the dates.—Annie Slee, defendant's daughter, who was in charge of the milk cart, deposed that her father was away at the time. She could not say how long he was away.—Would it be as much as seven days?—It was somewhere about that. She delivered the sample to her mother, and saw it lying on the chimney piece till her father returned, and it was the same when it was sent to Mr. Kitchen as it was the first day she saw it.—The magistrates retired to consider their decision. On their return, Mr. Dickinson said they had decided to adjourn the case for a fortnight, and in the meantime the third sample of the milk would be sent to Somerset House to be analysed there.—Mr. Chapman said the Somerset House authorities should be made aware how long the milk had been in the bottle.—The Clerk said he would give them all the information in his possession.—Mr. Chapman said his client thought he ought to have a portion of the sample sent to Somerset House.—The Clerk said that could not be done. Nothing could be taken out till it got to Somerset House.—Mr. Chapman said he quite agreed that the Clerk had no power to do this. He only asked that it should go upon the notes that the defendant had made that request.

It would be improper to express any opinion on the question at present, but we shall be curious to see the result of the Somerset House analysis.

#### "TRUTH" AND THE PUBLIC ANALYSTS.

IN its last issue *Truth* says: "There is a Society of Public Analysts, which from its title would be taken to be a body of analysts holding public appointments. Can anybody tell me whether that is the basis of its constitution, or whether membership is conferred on men who are not public analysts? Also whether the admission or rejection of a candidate for membership depends purely upon the question of his professional qualifications, or whether it may be influenced by merely personal considerations on the part of a small section of the Society? In other words, are elections conducted on the lines which are usually observed in a professional organisation, or on those which are occasionally followed in social clubs? My curiosity in reference to the Society has been aroused, I may add, by a recent case which has been brought under my notice."

We do not know what Labby is aiming at, but we think he should know that the Society of Public Analysts has a perfect right to reject persons considered unfit for membership. It is not like the House of Commons, where liars, thieves and low blackguards can be found as members. There should be at least some respectable societies in the country.

#### YOUNG ON RICKETTS.

##### A POINT IN MILK ADULTERATION LAW.

FIVE milk-sellers, of Hackney, appeared before Mr. Paul Taylor, at North London Police-court last week, to answer summonses which had been taken out by Inspector Punter, on behalf of the Hackney Vestry, for milk adulteration.

Mr. Tiddeman appeared for the Vestry.

Mr. C. V. Young represented one of the defendants. In this case the adulteration was fixed at 8 per cent. In the others it varied from 5 to 18 per cent. He drew attention to the form of certificate, remarking that he

had never seen any before in this court in that form. The certificate simply set out that the sample contained "92 per cent. of milk and 8 per cent. of added water."

Mr. Tiddeman said that the certificate was made out by the public analyst, who knew the proper forms to use.

Inspector Punter said that the same form had been in use 18 months, and Mr. Ricketts had never questioned it, although one had been before him.

Mr. Paul Taylor said he was ready to admit that Mr. Ricketts was a great authority on the Adulteration Acts.

Mr. Young: He is one of the best, undoubtedly. On one occasion I remember taking a point in a similar prosecution to this, and I was met with the remark, "Mr. Ricketts has never raised that point." I believe the justices before whom I was appearing thought it little short of impudence for me to raise a point which Mr. Ricketts had not thought of, but nevertheless they held that I was right.—(Laughter.)

Mr. Paul Taylor said there was a recent case on the certificate.

Mr. Young: Yes, sir, in May last.

Mr. Paul Taylor: It was decided by Mr. Justice Hawkins, who pointed out that water was one of the constituent parts of milk, and that various standards had been fixed by different authorities as to the quantity of water which milk should contain. A public analyst might adopt one standard, and the magistrate or the justices might adopt another. It was therefore essential that the constituent parts of the sample should be set out in detail, so that the magistrate adjudicating upon the case could form his own opinion.

Mr. Young said, in the face of this judgment, he should ask the magistrate to hold that the certificate was informal.

Mr. Paul Taylor: Certainly. This case is dismissed. It governs all the others, and where I have imposed fines the money must be returned at once.

Mr. Young asked for costs.

Mr. Tiddeman: I never asked for costs in any of these cases.

Mr. Paul Taylor said that he would not grant costs on this occasion; but if it occurred again he should impose heavy costs. He had been misled into imposing fines earlier in the afternoon by the statement that the forms had been in use 18 months, and he was at a loss to understand how it was that those in charge of these cases should not follow the changes in the law as laid down by the judges.

Mr. Tiddeman said he would see that the magistrate's remarks were conveyed to the public analyst.

#### COFFEE AND CHICORY.

AT Bury, W. H. Stark and Co., Agur-street, were summoned for selling coffee alleged to be adulterated.—Mr. Wolstencroft (deputy town clerk) prosecuted, and Mr. Bertwistle defended.—For the prosecution it was stated that the coffee was adulterated to the extent of 25 per cent.—A lad named Joe Catterall, said he went into the defendants' shop for Mr. Cass and asked for half-a-pound of coffee at 1s. 4d. per lb. The defendants' assistant ground some coffee in the kitchen, and added something else to it in the witness's presence.—Mr. H. Cass, inspector under the Food and Drugs Act, said that when he followed Catterall into the shop defendants' assistant said it was a mixture.—Mr. Bertwistle said that seeing that the mixture was made in the presence of the purchaser it was not done to the prejudice of the purchaser.—The defendants' assistant, Johnson, said he told Catterall that he had sold him a mixture of coffee and chicory.—Mr. Wolstencroft submitted that telling the purchaser it was coffee and chicory was not sufficient. The packet should have been labelled.—Mr. Bertwistle said that was a permissive part of the Act, and was intended as a means by which the seller should protect himself.—A fine of £2 and costs was imposed.



## THE CONTAMINATION OF MILK.

At St. Helen's Police-court, on Oct. 2, a milk-dealer named Peter Almond was summoned for suffering milk to be stored on his premises, 20 and 22, Manor-street, in such a position as to subject such milk to the risk of infection or contamination. The Town Clerk (Mr. Jeeves) said nothing tended so much to the spread of infectious disease as milk, and there was no more fruitful source of infection than the carrying of milk which had been subject to contamination or infection; therefore, in the interests of the public, it was very essential that milk-dealers should understand and be made to understand in the most rigorous way possible that they had a duty to perform in this respect. On Sept. 15 the Medical Officer of Health visited the premises, and on entering the shop he noticed a horribly foul odour, due to the keeping of pigs in an adjoining shed, which was in direct communication with the house in which the milk was stored. There was also a midden full of pig manure. On the premises were sixteen pigs, one cow, and one horse. It was a disgraceful and disgusting state of things. — Dr. Robertson (medical officer) and Sanitary Inspector Lowe having given evidence, the magistrates said they considered it a very serious offence, and imposed a fine of £4, or one month's imprisonment. — Defendant: Then I shall have the month.

## TAPIOCA.

At Romsey, Henry Southwell, of Lockerley, pleaded guilty to selling tapioca not of the nature and quality asked for.—Sergeant Charles Carman, of Winchester, proved sending for a pound of sago, which was divided in the usual way, and part analysed, when the certificate that was returned stated that it was tapioca and not sago at all.—Defendant produced his invoice from Misselbrook and Weston, of Southampton, showing that it was bought as sago, and he sold it all together under a mistake. The firm had written him to state that they would bear the expenses. The goods sold cost him more than the article asked for. He was very sorry the mistake was made.—Under the circumstances the Bench imposed a fine of 1s. only and costs.

## IMPORTANT LINSEED MEAL PROSECUTION.

On October 3rd, three persons were convicted at Athlone Petty Sessions for selling adulterated linseed meal. The prosecutor was Sergeant King, R.I.C., and the certificates of adulteration were given by Sir Charles Cameron. Mrs. Murphy was fined £4 for selling linseed meal containing only 6.66 per cent. of oil, Mr. D. O'Connell £3 for selling linseed meal containing only 7.43 per cent. of oil, and Mr. Peter Murray was fined £10 for selling linseed meal adulterated with 10 per cent. of foreign matter, and containing only 4 per cent. of oil. It was also swarming with acari.

## THE MARGARINE CRUSADE.

## CHARGE OF SELLING ADULTERATED BUTTER.

WILLIAM GRIFFIN, grocer, of Ware, was summoned at Ware Petty Sessions on September 29 by Mr. Thomas Johnson, inspector under the Food and Drugs Act, for selling to the prejudice of the purchaser a half pound of butter not of the quality and substance demanded, and which on being analysed was found to contain 70 per cent. of margarine, at Ware, on September 4.—Edith Davis, of Hertford, in the employ of Mr. Johnson, stated that on September 4 she went into defendant's shop in Baldock-street, Ware, and asked for half a pound of shilling butter. Defendant served her with it, and she took it outside to Mr. Johnson, who returned with her to the shop and divided it into three portions. The paper produced was that in which the butter was wrapped.—Defendant denied that the girl asked for shilling butter.—Mr. Johnson said that when he went into the defendant's shop and told him for what purpose the sample had been obtained he at once said, "That is a mixture; it is not pure butter." Witness pointed out that the sample was sold as butter, and that it was in a plain paper. The analyst's certificate, by Mr. A. E. Ekins, St. Albans, showed that 70 per cent. of the sample was margarine. Whilst dividing the sample defendant said he had been flurried, as it was a busy day with him, and he forgot to tell the girl he had sold her a mixture.—Cross-examined: Defendant did not say he told the girl he had no butter at the price asked for by her, but that he had margarine at 8d. and 1s.—Michael Hynes, also in the employ of Mr. Johnson, stated that he went into defendant's shop and heard the conversation that took place. He heard defendant say that the sample was a mixture.—Defendant was sworn, and stated that he told the girl when she asked for the butter that he had margarine at 8d. and 1s., but that he had no butter at the price. The girl then said, "I will take the 1s." Defendant was then charged with selling margarine in a paper not bearing the word "Margarine" upon it, as required by the Margarine Act.—Defendant pleaded guilty, and said his wife was ill at the time, and the place was upside down. He could not find the paper with the word "Margarine" on it, so he wrapped it in plain papers at once.—Mr. Johnson said there was no label on the lump of margarine on the slab. Defendant said that he had got a label, but he could not find it.—Defendant now said he knew he had done wrong; what he ought to have done was to have kept the girl waiting until he found the proper paper.—Mr. Johnson asked that defendant should be made to pay the analyst's fee.—The Chairman said the case was fully proved, and they considered there had been a glaring case of adulteration; of that the magistrates had no doubt. The public must be protected, and fines amounting in all, with costs, to 30s. would be imposed.—Defendant: I don't think it right. Can I appeal? I don't know that that was my sample; it should never have been taken out of the shop.—The Chairman: The case is settled now.

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At Woolton, on Oct. 2, Emma Kershaw, grocer, Woolton, was summoned for having exposed a quantity of margarine for sale without having a label on it. Inspector Perkinson, of the Lancashire Agricultural Society, stated that on August 31st he went to the defendant's shop and asked for half a pound of butter. As the defendant's daughter was weighing the article she remarked that it was margarine. Witness then stated who he was, and asked where the distinguishing label was, and she said she could not find it.—A previous conviction for a similar offence was recorded, and defendant was now fined 5s. and costs—in all 24s.

#### A RAID ON GROCERS IN THE PRESCOT DISTRICT.

At Prescott, on October 6, Mr. W. J. Parkinson, inspector to the Royal Lancashire Agricultural Society, prosecuted a number of grocers in the Prescott district. The first was Thos. Williams, grocer, Whiston, who was summoned for selling adulterated butter. Mr. Hutchen prosecuted on behalf of Mr. Parkinson, who had bought half a pound of butter at 8d. per lb. at the defendant's shop, which on analysis proved to contain 85 per cent. of fat other than butter fat. Defendant was fined £2 and costs.—The Huyton Quarry Co-operative Society were also charged with selling unlabelled margarine. The inspector said he paid 10d. for it, which was the price of butter. On analysis it was found to contain 10 per cent. of water and 65 per cent. of fat other than butter fat. A fine of 40s. and costs and the analyst's fee was also imposed in this case.—Mr. G. Stewart, grocer, Derby-road, Huyton, was charged with selling unlabelled margarine. The shop at the time of Mr. Parkinson's visit was in charge of two young men, defendant's brothers. He asked for a pound of what was marked "choice selected," at 1s. 1d. per pound, and this, on analysis, was certified to contain 11½ per cent. of water and 50 per cent. of fat other than butter fat. When weighing the butter, the assistant, suspecting something, said he had made a mistake, it was a mixture, and only charged him 10d. There were two lumps of stuff under the label, one behind the other, the second piece being margarine. Mr. Riley, for the defence, urged that the assistants were cleaning the counter and had temporarily removed this lump from the margarine stand. It had not been cut, and nobody had been served from it until the inspector came in. He stated the improbability of a respectable man like Mr. Stewart and his brothers, who were in the shop, lending themselves to such a mean fraud for the sake of a few pence. Thomas and Peter Stewart, the defendant's brothers, denied that any fraud had been attempted. The lump was only there while they washed the counter, and nobody had been served from it. They told the inspector it was margarine. A similar fine of 40s. and costs was imposed in this case.

#### CO-OPERATION AND DRUGS.

At Mold Petty Sessions, the Buckley Main Street Co-operative Society, Limited, were summoned by Supt. J. Ivor Davies, for an offence under the Food and Drugs Act.

The complainant stated that he went to the stores of the society, and purchased some sweet spirits of nitre. He then explained to the manager that it was for the purpose of analysis, and suggested that it be divided into three equal parts. The manager, however, saw no need. Subsequently, witness forwarded a sample to Mr. Lowe, the County Analyst, who returned the same with a certificate to the effect that the article was deficient in active principle as prescribed by the British Pharmacopœia.

A fine of 5s. and costs, amounting to £1 11s. 6d., was imposed.

## CORRESPONDENCE.

### WHO ADULTERATED THE MILK?

To the Editor of FOOD AND SANITATION.

SIR,—I never like to bring cases to the front again that have been settled, but I thought there was something to learn from a recent case that would be worth while to re-consider. We are told that the conviction of Messrs. Adcock, farmers, was a very hard case. I think so too, but not for the same reasons that the magistrates give. My sympathy goes with the farmer, for this reason: that the milk was in possession of the dairyman, and I would prosecute no farmer upon the evidence of the warranty alone. We dairymen are bound to have the warranties because the magistrates ask for them, and they are also evidence of the quality of the milk the farmer has contracted to send, but I hardly think they are good enough to form the groundwork alone of a prosecution of the farmers who give them, especially when there are safer and more reliable ways to work upon, as there were in this case. I sympathise with these farmers because the inspector did not take a sample of their milk as soon as possible after he knew the dairyman's milk was wrong, because it is here the fault lies, as in this case the inspector should have followed the milk up, and he did not. I very much regret the strong prejudice of the farmers against the taking of samples at the railway stations, and the extraordinary childish fears they express about them. I can tell these farmers that if the story they told the justices was true, and the inspector had taken a sample of their milk at the station they would never have heard of any prosecution.

There can be no doubt but that the farmers do run some risks when the milk has passed into other hands without any check, and the farmers are prosecuted upon the warranty alone; but in the transit of milk and the taking of samples at the railway stations there is none, not one particle of risk, but to honest farmers it will prove their day of salvation in the time of trouble. What Messrs. Adcock wanted was proof, and their statement, no matter how plausible, was not evidence; but if the inspector had taken a sample of their milk three or four mornings after he had taken the dairyman's, and this sample was found not adulterated, and if it was sent away from the farm in this condition, there is a million chances in its favour arriving the same. This would be *evidence strong as Holy Writ*. This was the sort of evidence these farmers ought to have had; this evidence would have prevented any proceedings being taken against those farmers, and would have answered the question, "Who adulterated the milk?" I have known many cases where the good name of many farmers has been maintained in this way. One word to the dairyman in this case: I know that it is very difficult, under the most favourable circumstances, for an innocent dairyman who has sold adulterated milk to the inspector to prove his innocence, and his position is a very serious one. It soon makes a strong man nervous. The mode of procedure here, I think, is worth following. After a sample has been taken by the inspector, we get another dairyman going to the same station to take one or two samples of this farmer's milk and get them analysed while you are awaiting the analyst's results of the inspector's sample. You then give the name of the farmer and the time and place of delivery, and request him to take a sample of the farmer's milk when it arrives. You will find this procedure much more satisfactory in the results than relying solely upon the warranty, or even with the evidence of a boy; you may be *technically right*, but after milk has been in the possession of the dairyman all the evidence we could bring would never remove the lingering doubt that remains in men's minds, or remove the injustice that may have been done the farmer, but



in taking samples at the station we do the farmers no wrong, and the benefits are equal and the results certain, leaving no shadow of doubt behind of who adulterated the milk.

If this case had taken place in Manchester it would only have been an everyday sort of case; it would have been stripped of every vestige of hardship; the case would have rested upon the results of the farmer's milk. If this had been found adulterated the farmer would have been fined, and their loud protestations of innocence treated at their proper value.—Yours, etc.,

Manchester.

ROBERT EDGE.

### WHY, WHEN, AND WHAT WE EAT.

By SIR CHAS. A. CAMERON,

*Medical Officer of Health, Dublin; Public Analyst; etc.*

(Continued from page 478.)

If they burned blocks of wood beneath the boilers of their engines, or in their furnaces, vital force was set free in the form of heat? So in the bodies of animals. Then why must they eat? Simply that they must employ a certain amount of energy in their bodies to keep them alive—that energy that came to them indirectly from the solar rays stored up to them in the food they took.

They required to have a temperature of 99 degrees Fahr. in their blood and flesh, and that heat they got from their food and indirectly from the sun. They also required to move about. They could not move or walk, or even think without destroying a portion of their bodies, or without destroying a portion of the food which might be in process of assimilation in their body. They then valued food in proportion as it produced heat and motive power. The most valuable kinds of food were those foods which, when decomposed in their body, either directly or after being re-organised in their tissues, gave the highest amount of heat. Thus they saw that why they ate was simply because they wanted to keep themselves alive. (Applause.) They wanted to maintain the action of the heart, to maintain the processes of respiration, to maintain the circulation of the blood. These were the vital functions. They must take a certain amount of food to carry on the vital portions of the body. But beyond that, if they wanted to work they must take something more than a starvation diet necessary to carry on the vital organisations of the body. Therefore, they must do something more than was necessary to do this, something more than was required to keep them alive if they had to earn their living by surplus energy.

The next point was to direct their attention to forms in which these elements of nature were produced in composition through the influence of the vital power of plants. If the vegetable world perished, the animal world would inevitably perish, and though the vegetable world was independent of the animal, the converse did not hold true. Thus man was not able himself to organise. There were several groups of food substances which were produced altogether by the vegetable kingdom. In the animal kingdom, however, slight changes took place when they assimilated the substance produced by plants.

The first group of substances were the carbo-hydrates, which formed the most abundant food of man all over the world. That group was composed of only three elements, carbon—which they had in a familiar form in Newcastle in the form of coal—carbon, and water. The elements of water were hydrogen and oxygen, and these, united by carbon, or he would call it by the familiar name of charcoal, constituted the great class of things known as carbo-hydrates. The bulk of the food of mankind was composed of these three elements—hydrogen, carbon, and oxygen; and in two of them in

the proportion in which they existed as water. Sugar, starch, woody fibres, the materials of their forests, and some other bodies closely allied were composed of carbon and water. They could not live upon starch or sugar, because they only contained three elements.

They had another element—nitrogen, but nitrogenous food formed a comparatively small proportion of their food, and the bulk was made up merely of these carbo-hydrates.

If they took the material they called fat, it contained the same elements as was present in sugar. Fat was the equivalent of starch, that was, the fat in their bodies was formed out of starch and sugar, formed out of a body containing only three elements, and was simply the component parts of the food substances.

If they took starch and sugar, they would find that they could burn them and get heat from them. But if they took the fat into which the starch and sugar were converted, they would find they produced a larger amount of heat. Therefore, there was much more heat in fat than in starch, and in the animal economy they would find that it required 2½lbs. of starch or sugar to produce one pound of fat. Therefore, when they burnt a pound of fat, they produced as much heat as if they burnt 2½lbs of starch and sugar. But how did we burn them in our bodies? There was a great process going on incessantly in our bodies—the process of the inspiration of atmospheric air. We took into our lungs and bodies an enormous amount of air. The air was more than 800 times lighter than water. We took a larger weight of atmospheric air than we did of liquid and solid food. Therefore they would see how important it was that the quality of the air we breathed should be taken into consideration. If it were important that the water we consumed should be pure, how much more important was it to have due regard to the quality of the air that we breathed? (Applause.)

When we took into our lungs atmospheric air, the oxygen of the air passed through the delicate membranes surrounding the lungs, and got dissolved, and was then carried by the blood through the whole system. It then burnt the blood, the flesh, and the fats of our bodies.

Food was burnt in the process of digestion, whether it were digested or semi-digested food. The process was a slow one. With a rapid process heat as well as light was produced. This river of life of blood was saturated with the oxygen gas of the air, and that gas surely burnt off the carbon and hydrogen of our tissues, fat, flesh, and blood, and converted them into carbonic gas and water.

In our brains there was something like 2 per cent. of phosphorus, and the most phosphorised parts of the body were the brain and the spinal cord. The most valuable food as a rule contained much phosphorus. Of course he did not include matches as an article of food. (Laughter.) The phosphorus was burned in our bodies and made phosphoric acid. On a frosty day they would notice horses with enormous clouds of vapour surrounding their nostrils. This was water they had thrown out of their bodies, and the product of the combustion of the hydrogen in their bodies.

The lecturer, to illustrate the giving-off of hydrogen in the shape of moisture from the body, produced hydrogen by pouring hydrochloric acid over zinc filings, and fired the gas at the end of a narrow tube passing through the cork into the bottle.

Then he placed over the smaller tube a tube of larger size, and perfectly dry, with the result that the air drawn by the heat into the tube produced a shrill sound, which the lecturer humorously likened to the steamer's whistle on the Tyne. The object of his little experiment was to show that the burning of the hydrogen produced moisture in the larger tube—just as, he said, the combustion and hydrogen in the human body produced moisture; only the human being did not give light. (Laughter.)

(To be continued.)



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# Food & Sanitation

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## Food and Sanitation.

SATURDAY, OCTOBER 17TH, 1896.

### THE PURITY OF DRUGS.

MEDICAL etiquette, or dignity, or whatever it may be called, is, to us, a something ever expressing itself in so many irreconcilable ways that we are compelled to admit we cannot understand it. The average right-thinking person, for instance, would consider the presence of salicylic acid in, say, Ipecacuanha wine as decidedly to be condemned; but when, in addition to this surreptitious drugging by salicylic, we have a deficiency of a considerable percentage of the alcohol in the said wine, we may find it desirable to examine the reason for such a deficiency. The introduction of

salicylic acid into wine can only be as a "keeping" agent in place of the recognised alcohol.

When Her Majesty makes a "Sir" of a medical practitioner, we consider it is an honour which ought to be lived up to. Of all adulterations none is more to be condemned than drug adulteration, because it is, as we have for years pointed out, the most heartless. The skill of the ablest physician is baffled by it, and the evil has grown to be so extensive that the most careful medical men have often to insist upon their prescriptions being made up by certain firms whose drugs are known to be in every case prepared according to the standard of the pharmacopœia.

Sir Chas. A. Cameron chanced some time ago to make an analysis of a large parcel of Glauber's salt, and found no less than 8 grains of arsenious acid to the pound. As he said: "Suppose that a corresponding magnesium compound were to be freely sold? Some persons are in the habit of taking from one ounce to an ounce and a-half of 'salts' every morning before breakfast. Assessing this at one ounce, it would mean that they were swallowing fifteen grains of 'white arsenic' in the course of a calendar month—always supposing that they managed to live to the end of the month."

Almond flavouring has been found to contain a most deadly poison—prussic acid—and at Leicester a boy was poisoned by it.

Samples of reduced iron analysed had 3 per cent. to 23 per cent. of metallic iron, whilst the British Pharmacopœia standard was 50 per cent. That a purchased sample contained but 3 per cent. shows the extent of fraud practised in the drug trade. Of asafoetida, a sample contained only 5 per cent. of the genuine drug. Opium was adulterated, Egyptian having on an average a morphine strength of 4 to 6 per cent.; but Smyrna opium ranges from 13 to 19 per cent. of morphine, whilst Persian contains from 8 to 14 per cent., a sufficient difference to cause danger in prescribing the drug.

Spurious sarsaparilla is regularly for sale in the market. Balsam of copaiba, which has none of the properties of the true copaiba, is imported and sold as genuine.

Seidlitz powders purchased indiscriminately from stores, grocers and chemists, have contained lead.

Of tincture of hyoscamia, it has been found beautiful in appearance, but for effect it might have been tincture of cabbage.

Mr. Helbing, speaking of narcotic herbs, said that what was imported into this country from Germany was rubbish.

Precipitate of sulphur is adulterated with sulphate of lime, and sulphate of lime has been found fatal by forming concretions in the bowels.

Scammony cannot be relied on as a purgative, on account of adulteration with resin, chalk and starch.

Essential oil of lemons has been found to contain one-third to one-half spirits of turps.

Saffron has been bought that consisted of fine shreds of onions, dried and artificially coloured; and also of the powder of sweet cayenne, or paprika, made adherent to the styles by honey. Of this latter adulterant there was in some samples 60 to 70 per cent.

Castor oil is at times made of common oil and cotton oil.

Cayenne pepper has been found adulterated with red lead.

The above instances of fraud and impurities in drugs show how well-founded is the complaint of the Local Government Board that "The number of samples of drugs examined, though greater than in any previous year, was, in our opinion, scarcely commensurate with the importance to the community of securing the genuineness of medicines." Yet it is not overstating the case to say that in the majority of counties and boroughs throughout England not one sample has been taken for analysis for years past.

In the light of facts like these, we confess to having



rubbed our eyes in amazement at finding Birmingham's Medical Knight, head of the profession in the city, where Professor Postgate and other earnest men began and carried through the first agitation for an Act to suppress adulteration, appearing in support of salicylic acid in ipecacuanha wine. In the same queer position was Dr. T. R. Bailey, who, we believe, is medical officer of health for Bilston. Dr. Paul, of London, was there also, but we are not amongst those who could be surprised at Dr. Paul being present at any assassination of the Pharmacopœia, and its microscopic efforts to ensure the purity of drugs. The case was heard on October 9 at the Wolverhampton Police-court, before Mr. N. C. A. Neville (stipendiary magistrate). Messrs. Wyleys, Limited, wholesale and manufacturing chemists, of Coventry, were summoned by Mr. G. F. Allwood, inspector under the Food and Drugs Act for the borough, for giving a false warranty as to the quality of ipecacuanha wine which they had sold to Ernest Edward Hall, chemist and druggist, Newbridge Pharmacy, Tettenhall-road; and there was a second charge of a like character in respect to a warranty given to Henry Hudson, of North-road. Mr. H. Brevitt (Town Clerk) prosecuted, and Mr. R. E. C. Kettle (instructed by Messrs. Glaisyer and Porter, solicitors, Birmingham) defended.—The Town Clerk took the case of Mr. Hall first, and explained that he ordered some ipecacuanha wine from the defendants, and it was supplied on February 22. Mr. Allwood afterwards purchased some, and after its being submitted to Mr. E. W. T. Jones, the borough analyst, that gentleman certified that it contained .27 grain per ounce of salicylic acid. When the wine was supplied a guarantee was given on the invoice that the preparation was of the full strength according to the British Pharmacopœia.—Mr. Hall gave evidence as to the purchase of the wine and as to the guarantee on the bottle, and Mr. Allwood having spoken as to making a purchase of ipecacuanha wine from Mr. Hall, Mr. E. W. T. Jones deposed that in making an analysis of a sample submitted to him he found that it contained .27 grain per ounce of salicylic acid. In answer to Mr. Kettle he stated that such wine could be preserved without salicylic acid if made according to the recipe of the British Pharmacopœia. In that recipe there was no salicylic acid prescribed, and it was not a necessary ingredient. Mr. Brevitt asked if it was necessary to call further evidence.—The Stipendiary said it seemed to him that he had simply to decide whether the article was prepared according to the British Pharmacopœia.—Mr. Kettle addressed his Worship, contending that the guarantee might be read in various ways, but whatever it was it would not affect the matter in the least. For all material purposes the wine supplied was up to the British Pharmacopœia strength, and the defendants carried out their guarantee. The introduction of salicylic acid was not injurious to health, and was required in its preparation to make it fit for carriage and consumption. Only a limited guarantee was given, and he should have no answer if it was held that the article was to be prepared absolutely according to the British Pharmacopœia.—The Stipendiary thought that if the addition of salicylic acid was to be regarded as an improvement the subject was not one to be fought out there, but before the authorities of the British Pharmacopœia.—Mr. Kettle argued that there had been no intention to defraud. Witnesses would give material evidence on that point.—The Stipendiary said he did not think there had been any intention to defraud. His opinion was that the British Pharmacopœia was the only standard that ought to be relied upon. If the authorities who made the British Pharmacopœia were to be relied upon, there should be some appeal to them. After further argument, the Stipendiary decided to convict in one case, and imposed a fine of 20s. and costs, and the second case was withdrawn. The costs amounted to £11 10s. The Stipendiary consented to

grant a case, if required, on the construction of the guarantee.—Among the witnesses who were in attendance were Sir Willoughby Wade, Birmingham, Dr. Paul, London, and Dr. T. R. Bailey, Bilston, for the defendants, and Dr. A. Hill, Birmingham, for the prosecution.

If the case should go to appeal we shall be curious to hear the evidence of the Medical Knight and the Medical Officer—it may enable us to understand what medical etiquette, dignity, or regard for the purity of drugs really mean. If an object lesson be required we present one in another column, which demonstrates that linseed meal in one place blessed by a *curio* in Sheriffs may be anything the vendor likes to sell.

### THE CRUSADE AGAINST MARGARINE.

AT Wigan, on October 5, John Oliver, 56, Standishgate, Wigan, was summoned for selling adulterated butter. Mr. Parkinson, Inspector of the Royal Lancashire Agricultural Society, went into defendant's shop and asked the shopman Jones at what price he sold his butter. Jones replied 1s. a pound. He purchased a sample, which, on analysis, was found to contain 50 per cent. of foreign fats. The defence was that when Mr. Parkinson came into the shop he asked for a pound of 1s. butter, and was served from a firkin with a substance which was a mixture of butter and margarine, that the tub was marked on the top, sides, and bottom "margarine," as required by the Act, and that before the sale was completed Jones informed Mr. Parkinson that it was a mixture. Mr. Oliver was not present in the shop at the time. The Magistrates having decided that the case had been proved, a similar conviction in 1893 was mentioned by Mr. Peck and admitted, and a fine of £10 and costs was imposed.

FREDERICK TILBURY, grocer, Thorpe Sea, Egham, was summoned at the County Petty Sessions, on October 11, for selling margarine without labelling it as such. The Inspector stated that the margarine was delivered to him in ordinary white paper which had no label attached. A fine of 20s., including costs, was imposed.

AT the Thornaby Police-court, on October 5, Edward Smith, wholesale yeast merchant, Middlesbrough, was charged with selling margarine as butter. The Bench inflicted a fine of £2 and £1 5s. 6d. costs.

AT Widnes, on October 8, John Godfrey, Ditton, was summoned for having exposed margarine for sale without having it properly labelled.—Mrs. Godfrey appeared on behalf of her husband, and produced a label which she said she had on the margarine when the inspector called.—The inspector (Mr. Parkinson) said the label produced was simply the one used for wholesale purposes, and was not suitable for retail trade, as the Act stated that it should be printed in letters an inch and a-half deep.—The Bench imposed a penalty of 2s. 6d. and 21s. 6d. costs.

JAMES O'KEEFE, grocer, Litherland, was summoned at Liverpool, on October 12, for having exposed margarine for sale without there being a proper label attached thereto, the law requiring that the letters should be one and a-half inches square.—It appeared from the evidence that the margarine was labelled, but the letters were smaller than the required size.—Defendant was fined 2s. 6d. and costs.—John Harris, grocer, Litherland, was summoned for a similar offence. In this case the margarine was not labelled at all, and a penalty of 5s. and costs was imposed.—Inspector Parkinson, of the Royal Lancashire Agricultural Society, proved the cases.



## A VESTRYMAN AND HIS MILK.

AT Worship-street, on Oct. 8, David Hughes, dairyman, a member of the St. Luke's Vestry, residing at 39, Baldwin-street, St. Luke's, was summoned at the instance of the Vestry for selling a pint of milk, adulterated with 19 per cent. of added water.—Mr. Collins, solicitor, prosecuted, and Mr. Layard, solicitor, defended.—Mr. Collins said in the present case when the inspector purchased the milk the defendant tried to induce him to refrain from carrying out his duty.—Mr. Layard: There is no suggestion of such a thing in the summons, and I object to it being mentioned.—Mr. Dickinson: The summons is purely one of adulteration. I shall not allow any other matter to be gone into.—Frederick Screch said that on Sept. 9 he visited the defendant's premises, and there asked the defendant for a pint of new milk. He was served and paid 2d. The Inspector, Mr. Adams, then came to the door of the shop, and witness handed the milk to him.—Richard Adams, sanitary inspector in the employ of the St. Luke's Vestry, said the last witness handed the milk to him after the purchase. Defendant was present, and he consented to the sample being divided into three parts. This was done, and one part witness took to the public analyst, whose certificate showed that the milk was adulterated to the extent mentioned in the summons.—For the defence Mr. Hughes was called, and said he served Screch with the milk, and afterwards Screch left the shop and was absent two or three minutes, when he returned with the inspector.—Cross-examined: He was a member of the St. Luke's Vestry.—Mr. Layard contended that if it was true as stated by the defendant that the assistant left the shop after purchasing the milk, the matter would be open to much suspicion.—Mr. Dickinson said the assistant stated that he only went to the door of the shop, and he had no reason to disbelieve his evidence. Had the defendant been summoned before?—Inspector Adams: Yes, I believe so.—Mr. Dickinson: How long ago?—Inspector Adams: I have not been able to quite find out. I believe it is some 15 years ago.—Defendant: It is over twenty years ago.—Mr. Dickinson: I shall take no notice of that. But 19 per cent. is a heavy adulteration, and defendant will be fined £3 and costs.

## WHAT IS LINSEED MEAL?

## WE ACCORD SHERIFF COWAN, PAISLEY, A PLACE AMONGST OUR LEGAL CURIOSITIES.

In the Sheriff Court, Paisley, on October 5, Sheriff Cowan heard a complaint at the instance of Mr. W. W. Kelso, Burgh Inspector, under the Food and Drugs Act, against J. B. Hunter, chemist and druggist, Smithhills, charging him with an offence against the Sale of Food and Drugs Acts, in so far as on August 5 last, within his shop in Smithhills he sold, by the hands of his shopman, to Wm. Adam, assistant sanitary inspector, one pound of linseed meal, being a drug which, when so sold, was not of the nature, substance, and quality of the article demanded, "linseed meal," in respect that it was deficient in the oil naturally present in linseed. The analyst's certificate stated that he was of opinion "that 54 per cent. or thereby of the said oil, naturally present in linseed, has been abstracted from this linseed meal; oil in sample 13·8 per cent." The respondent pleaded not guilty, and argued that there was no standard for the quantity of oil in linseed meal. It was argued for the complainant that up till 1885 the Pharmacopœia recognised two qualities of linseed meal—"crushed linseed," that is with the whole oil naturally present in the seed included, and "linseed cake, milled" or "cake meal" that was known as "powdered linseed," which was linseed with half the natural oil extracted, but since that date the term "linseed meal" meant only the former—i.e., "crushed

linseed"—and that chemists were bound to supply that alone unless a special kind was asked and sold under its proper name. The question was what was linseed meal, and the Pharmacopœia must settle that for the chemists. Physicians in ordering poultices, which generally contained some irritant, were entitled to rely on the heat-retaining and soothing and lubricating qualities of the full amount of natural oil as against a definite amount of irritant, and not on linseed meal minus one half of its natural oil. This was the understanding among chemists. A good poultice was often of great importance, and sometimes the turning point in serious chest attacks. Linseed contained from 25 to 40 per cent. of oil, whereas this sample contained only 13·8 per cent., and on respondent's showing the price should be 2d. not 3d. per lb., for it was proved that the cost of linseed cake was only one-half that of crushed linseed, as linseed oil was an article of commercial importance and sold at a good price. Dr. Christison's opinion, quoted in favour of powdered linseed, was given in 1848, and only held good in view of the risk of the oil being allowed to become rancid. No such thing ever happened now, and Dr. Christison's opinion was out of date. As to the paper absorbing the oil and oil falling to the bottom of the bulk, that could only have an infinitesimal effect. The French Pharmacopœia required 30 per cent. of oil, and the United States one 25 per cent. of oil to be in linseed meal. He craved a conviction. After hearing the evidence the Sheriff found the complaint not proven, it having been proved by the respondent that there are two kinds of linseed meal ordinarily sold by him, linseed cake crushed or powdered, and crushed linseed, customers preferring the one, some the other, and it not being proved that the prosecutor asked or demanded the linseed meal of the British Pharmacopœia, which is crushed linseed. In honour of this judgment that linseed meal, or an adulterant, may "go as you please" in Paisley, no one will begrudge Sheriff Cowan his well-merited honour.

## THE SEQUEL TO "A VERY CURIOUS MILK CASE."

AT Cleator Moor, on October 9, the adjourned case of Joseph Slee was heard. The Clerk said the case was adjourned in order that the third portion of the sample of the milk taken by Supt. Kelly and his officer should be sent to Somerset House for analysis by the Government analyst. He sent the sample to Somerset House on September 25, with a statement that, through a conflict of evidence, he was asked by the magistrates to submit the third sample for analysis. The laboratory authorities at Somerset House replied directing his attention to an extract from the Local Government Board regulations requiring that the nature of the alleged adulteration should be stated, along with such other particulars as would facilitate the examination of the sample. In reply to that he wrote that, as stated in his previous letter, the alleged adulteration was the addition of water, and that the defence was that the public analyst had made a mistake in his analysis. On Thursday last he received from the Government laboratory a certificate which stated that the sample of milk "contained non-fatty solids 8·09 per cent., and fat 3·51 per cent. From a consideration of the results of the analysis, and after making deduction of the non-fatty solids on account of loss arising from the change which had occurred in the milk through keeping, we are of opinion that the sample in question contained not less than 3 per cent. of added water."—Supt. Kelly said he had got the county analyst, Mr. Hellon, and Mr. A. Kitchin present. Since the last Court they had effected an exchange and checked their analysis by testing the portions of the milk left in the bottles received respectively from the police and the defendant.—Robert Hellon, county analyst, said that on the 26th September, the day after the last hearing



of the case, Mr. Kitchin called on him and suggested that, as there was such a large discrepancy in their results, they should exchange samples. Witness was perfectly willing to do so because he had preserved his milk by means of Forlamine, and Mr. Kitchin had preserved his in the same way. He considered that milk which was at all decomposed could not give accurate results in analysis, but by the means they had adopted they could keep milk for a month. He analysed the sample which Mr. Kitchin had left with him, and he obtained specific gravity 1.031, non-fatty solids, 8.82, fat 5 per cent., water 86.18, and expressed his opinion that this was a milk of unusually good quality. He produced the certificate which he gave Mr. Kitchin.—Supt. Kelly: In regard to the portion sent to Somerset House, would you have been able to analyse it properly?—If it had been put into my hands or the hands of almost any other chemist than those at Somerset House it would have been refused for analysis. When milk was so far decomposed as this must have been, it was quite impossible to get accurate results. In that opinion he was backed, he thought, by all chemical authority. The difference between his original analysis of the milk and the analysis of the sample sent to Somerset House was wholly due to the decomposition which had taken place in the latter case.—Cross-examined: Aren't you of opinion that the time which had elapsed before the third sample reached Somerset House could make practically no difference as regards the amount of added water?—The amount of added water is calculated upon the amount of non-fatty solids. Non-fatty solids undergo decomposition, and consequently owing to the lapse of time and this decomposition, it would be impossible to form an opinion whether water had been added or not—or the quantity of water, I should say.—Therefore the estimate of 3 per cent. is not reliable?—I put no reliance upon it.—In fact this is a deduction from the knowledge come to them—they make a shot at it?—Not a pure shot; they have a method for allowing for decomposition.—Archibald Kitchin, chemist, Whitehaven, said he got a portion of the milk that was left with Mr. Hellon, and gave Mr. Hellon a portion of the milk he received from the defendant. He analysed the portion he received from Mr. Hellon, and produced the certificate of the analysis. This was read by the clerk as follows: Solids, not fat, 3.73; fat, 3.76; water, 80.7; specific gravity, 1.078. These results indicated not less than 9.1 per cent. of added water.—Supt. Kelly: Then your certificate practically agrees with Mr. Hellon's certificate that he gave at the first hearing?—That is so.—Have you the bottle that you received from Mr. Sleet?—Witness produced the bottle.—Is the seal the same as when you received it?—It is exactly in the same state except that a corkscrew has been driven through the cork to draw it. The magistrates examined the broken seal.—By Mr. Chapman: In regard to the Somerset House analysis he agreed with Mr. Hellon that it was impossible to tell to two or three per cent. the amount of added water when the milk had decomposed.—Inspector Steele said the seal of the bottle containing the sample originally analysed for the defendant by Mr. Kitchin was not in the same state as when he (witness) gave it to the defendant at the time of the purchase. The seal was quite different.—Mr. Chapman: How do you mean that it is not the same? Of course, you see the cork has been drawn.—Yes, there are apparently two holes in the cork.—In what condition would you expect to see it?—I would expect part of the seal to be intact.—Mr. Chapman asked the magistrates to consider whether there was any case against his client.—The Chairman: You had better go on with your defence, Mr. Chapman.—Mr. Chapman, for the defence, contended that the balance was in favour of his client. The Somerset House certificate was a leap in the dark, based upon another leap in the dark. He submitted that his client was entitled to the benefit of the doubt.

—The magistrates considered the case proved, and the Chairman said that in the interests of the public they had decided to impose a penalty of £5.

#### DEATH FROM EATING GERMAN SAUSAGE.

At Lambeth, on October 8th, Mr. A. Braxton Hicks held an inquest into the circumstances attending the death of Charles Williams, aged eight years, son of a cooper's labourer, residing at 14, Cardigan-street, Kennington-cross. The deceased had been eating German sausages on the previous Monday, and he died under unusual circumstances on Tuesday morning. Catherine Williams, mother of the deceased, deposed that her son was at school the day before his death. He was then in good health. He had eaten German sausages during the day, and complained of pains before going to bed. Early in the morning he was breathing heavily; but that did not alarm her, as she believed it was due to the soundness of his sleep. In the morning, about eight o'clock, when she went to call him, she was startled by finding that his face was black. Immediately she summoned a doctor. Dr. Lichfield, of Upper Kennington-lane, stated that the boy was dead when he saw him. He made a post-mortem examination, and found the intestines irritated by some poisonous food. Death was caused by gastro enteritis, brought on probably by the German sausages which the deceased had eaten. The jury found a verdict in accordance with the medical testimony.

#### WATER AT SPIRIT PRICE.

At the Shire Hall, Nottingham, on Oct. 10, William Hogg, licensed victualler, Woodborough, was summoned for selling whisky which had been unduly adulterated with water. Colonel Storey, inspector under the Notts County Council, stated that on Sept. 11 he went to defendant's premises, and purchased a quartern of whisky from defendant. He informed defendant as to the purpose for which he had bought the whisky. Defendant could not tell him the price of the quartern, and said his wife usually looked after the business. The analyst's report showed that the whisky was 31.3 under proof. Defendant told the Bench that although he held a licence he had another business, and his wife attended to the public-house. A fine of 40s. was imposed.—Ann Foster, holder of a licence at Epperstone, was also summoned for selling whisky which was 45.1 under proof. Col. Storey deposed to entering the defendant's licensed premises, and purchasing a sample of whisky. Defendant served him, and he informed her that the whisky would be analysed. The report of the analyst proved the whisky to have 26.9 parts of added water. Defendant alleged that the Inspector came into the place and pointed to a bottle, and insisted upon having a sample from the contents. The bottle in question contained liquor which she did not intend to sell to anyone. The Bench considered the case proved, and fined the defendant four guineas.

#### MUSSEL POISONING.

DR. WESTCOTT held an inquest at Shoreditch on Saturday concerning the death of Emma Humphreys, of Wilkes-place, Hoxton.—Emma Fretin stated that the deceased, her mother, ate some mussels on Monday night. She was afterwards seized with violent internal pains, and death ensued.—A doctor said death was due to acute gastro-enteritis. Mussels were often poisonous after being attached to the copper bottoms of vessels. He was of opinion that the deceased's illness was set up by a poisonous mussel.—The jury returned a verdict in accordance with the doctor's evidence.



## FOOD AND DRUGS ACT REPORTS.

### ST. GEORGE'S IN THE EAST (LONDON).

THE result of the analysis of various goods purchased in the parish under the Food and Drugs Act disclosed that the analyst had found the specimens—milk, butter, etc.—still showed fraud to the extent of 13 per cent. The number of cases of adulteration, however, was just half the number reported last quarter.

### WHITECHAPEL (LONDON).

THE Analyst to the Whitechapel District Board in his quarterly report states that the whole of the samples presented for analysis were unadulterated with the exception of one sample of milk, which was adulterated with 19 per cent. of water and was deficient in cream to the extent of 40 per cent. The adulterated sample was purchased in the street on a Sunday, and the vendor having given a wrong name and address the Inspector was unable to trace him.

Frankly speaking, we do not believe the food of Whitechapel is in anything like this pure state. Do the Board terrorise the Inspectors?

### ESSEX.

THE County Analyst (Mr. T. A. Pooley) reports that only one sample of adulterated butter has been met with during the quarter, but that contained 35 per cent. of margarine. A sample of cocoa contained 40 per cent. of starch and sugar, but as these were usual constituents of manufactured cocoa, and as absolutely pure cocoa is rarely met with, he advised that no proceedings should be taken.

### WEST RIDING (YORKS.) COUNTY COUNCIL.

MR. ALFRED H. ALLEN, of 67, Surrey-street, Sheffield, in his report to the West Riding County Council for the quarter ending June 30, states that he has received and duly analysed and reported upon 632 samples, of which 531 were received from the inspectors of weights and measures, and 101 from local authorities in the West Riding. The spirits, of which a considerable number have been received, are in many cases diluted below the minimum strength allowed by the Sale of Food and Drugs Amendment Act, but no tangible adulteration other than water was detected. In making his statement he must not be held to imply that in other respects all the samples were of excellent quality. Rum, brandy, and whisky are popularly supposed to be spirits obtained by the distillation of fermented sugar or molasses, grape juice, and malt infusion respectively; but no legal definitions of these spirits exist, hence it is not possible to certify that the articles sold are not of the nature demanded. Nor is there any law to prevent the sale of new spirit instead of that which has undergone a proper process of maturing. The remaining samples call for little comment. In two cases lard was found to contain an admixture of cottonseed oil. Several other samples of lard were also of a suspicious character. Some iron pills, on examination, were found to have an average weight of  $6\frac{1}{4}$  grains, as against the weight of 5 grains prescribed by the British Pharmacopœia. A sample of quinine wine was found to contain only three-fifths of the amount of sulphate of quinine directed by the British Pharmacopœia to be used in the preparation of quinine wine. In two cases tincture of rhubarb was found destitute of saffron, and in one instance also deficient in the proportion of alcohol and extractive matter. The practice of adding to ground ginger a certain proportion of ginger from which the active principle had been extracted is now much less common than was the case a few years since, but a sample has been received which was found to contain not less than 20 per cent. of exhausted ginger.

### MILK: IT MAY BE CHEAPER TO REFUSE TO SELL.

AT Cardiff Police-court, on October 9, Annie Naish, of 215, Bute-street, was summoned for obstructing Philip David, the local inspector appointed to enforce the carrying out of the Food and Drugs Act, while in the execution of his duty.—Mr. T. Andrews prosecuted, and explained that when David went to the shop kept by defendant and asked to be supplied with a pint of milk for the purpose of analysis, Mrs. Naish refused to comply with the request, and took the glass of milk poured out by the servant into a back room, so that the inspector could not take it away.—These facts were borne out by David's evidence, and defendant was fined 10s. and costs, or, in default, 14 days' imprisonment.

### MILK.

EDWARD BIRD, of the Railway Arms, Abbot's Langley, was summoned at Watford on October 6.—Wilfred Brown, assistant to the Inspector of Weights and Measures, said that he purchased a pint of new milk from defendant's wife, and paid her  $1\frac{1}{2}$ d. for it.—Inspector William P. Rushworth corroborated the witness's statements, and said the certificate by Mr. A. E. Ekins, St. Albans, was to the effect that the milk was 27 per cent. deficient in fat.—Elizabeth Bird said that she told Brown it was not new milk. Witness gave him a pint and a-half. Brown asked for milk, not new milk.—Defendant was fined £2, including costs.—The Chairman said there was no doubt about the case, and if all the people in Abbot's Langley got new milk of that kind he felt sorry for them.

### DERBYSHIRE COUNTY COUNCIL AGREE WITH US ABOUT THE FERTILISERS AND FEEDING STUFFS ACT FIASCO.

THE Derbyshire County Council have reported that as the Fertilisers and Feeding Stuffs Act seemed to be practically useless in Derbyshire, they recommended that a communication be addressed to the Board of Agriculture, suggesting that the Act be so amended that the inspectors have the same powers to procure samples for purposes of analysis under this Act as they have under the Food and Drugs Acts. The committee recommended that the county analyst be at liberty, for a period of twelve months, to make analyses for residents in the county on the distinct understanding that no offensive matter was brought to the Laboratory for such purposes, and, further, that the committee be authorised and empowered to fix a scale of fees to be taken for such analyses, and that one-third of such fees be paid into the County Fund and the balance be personally retained by the analyst in consideration of the additional work that would be entailed upon him, the same not being contemplated on his appointment. It was felt that if the analyst was allowed to make analyses under the above recommendations that the proportion of fees to be paid into the County Fund will well recoup the county for the use of the Laboratory, chemicals, and instruments employed.

Alderman the Hon. W. M. Jervis, in moving the adoption of this report, together with the report of the county analyst, said that the committee, knowing that the time of the county analyst was entirely at their disposal, and that he had occasionally some time to spare, thought that he might be requested to undertake the duty of analysing various articles which did not come within the Food and Drugs Act. (Hear, hear.) Of course, a certain fee would be charged to anyone who desired to avail themselves of Mr. White's services, but if the committee found that his ordinary work grew to such an extent that he was unable to undertake cases of private analysis, they would at once put a stop to them.

The Clerk explained that a proposal had been made



for the fees to vary from 10s. 6d. to two guineas, whilst there would be a reduction in certain cases made to farmers.

#### A MAGISTRATE AND A SANITARY INSPECTOR.

MR. MEAD, at North London Police-court, on October 9, heard a case in which Sanitary Inspector Samuel Legg declared that Kemp's test proved to him that there were defects in the soil pipes, there was an overflow of water from the cistern which made the walls damp, and the hopper pan was foul.—In cross-examination by Mr. H. H. Richardson, who defended, the inspector said he might have given the builder's card (produced) to the owner of the house and recommended that he be given the work of repair.—Mr. Mead: Not "might have given"—did you as a fact give the lady the card?—The Inspector: If she says I did, I dare say I did; but I don't remember it.—Mr. Mead: Where did you get the card?—The Inspector: I dare say the man whose name is on it gave it me.—Mr. Mead: For what purpose?—The Inspector: Oh, for the ordinary purpose, I suppose. I would ask him his name, and he would give me his card.—Mr. Richardson now called the lady owner, who said her father, who was a builder, erected the property on the most approved sanitary principles ten years ago, and she alleged that this prosecution was instigated by the tenant of the house, with whom she had had some disagreement.—Mr. Smith, a builder, said he knew this property well, and, at the request of the owner, inspected it yesterday. He used Kemp's test, and failed to find any offensive smell, the hopper pan was clean, and there was no waste of water.—Mr. Mead said he would dismiss the summons on its merits, and add that sanitary inspectors with such important functions should be above suspicion, and use their powers for proper purposes.—Mr. Tiddeman said he would convey his worship's remarks to the Vestry.—Mr. Mead: I hope you will.

#### THE GROCERS' EXHIBITION AND ADULTERATION.

PROFESSOR GOODFELLOW last week gave a series of demonstrations on the following subjects:—"The Simplest Method of Detecting Margarine in Butter"; "The Simplest Method of Detecting an Excess of Water in Butter"; "The Simplest Method of Detecting the Presence and Percentage of Chicory in Coffee"; and "The Simplest Method of Detecting the Presence and Percentage of Foreign Fats in Cheese." He said there were no entries in the first and last class, which he was not surprised at, as it was a most difficult matter to detect the presence of foreign fat. The test of detecting water in butter was won by Mr. Geldard, of Manchester, who, proceeding on the principle that water would evaporate at a point when the butter would remain unchanged, had invented an apparatus for carrying that out. He considered the test both simple and accurate. The test of detecting chicory in coffee was won by Mr. Mills, of Oldham, who based it

on the knowledge that chicory had a greater specific gravity than coffee, and consequently by pouring pure coffee and chicory into separate jars of water of an exact size they found the chicory at once fell to the bottom, while the coffee remained for a time at the top. It would be difficult, however, to ascertain the percentage of chicory by that means. The Professor replying to a question said he would be pleased to give other coffee tests through the medium of the trade Press.

#### THE PURE BEER ENQUIRY FARCE AFRAID OF PUBLICITY.

WHEN we protested against this committee as an outrage and a public insult we were aware what its game would be. The first move was made on October 8th, when the Earl of Pembroke and Montgomery presided. In addition to this ornamental figure-head, there were present Dr. James Bell, Sir J. H. Gilbert, Professor Odling, Mr. H. W. Primrose, and Mr. Clare Sewell-Read, with Mr. W. Blain, of the Treasury, as secretary.

All the members of the committee being present, the course of procedure was discussed. The main point upon which debates arose had relation to the admission of the representatives of the newspapers to the sittings of the committee. While some of the members of the committee strongly held that the evidence taken before them ought to be published, others were opposed to this suggestion, regarding the investigation in the light merely of an inquiry to elicit information for the guidance of a great public department of the State.

It was ascertained that the Excise authorities were on the side of privacy, notwithstanding the fact that Mr. Quilter, who moved the Treasury in the matter, was desirous of the fullest publicity, as illustrated by the attitude which he has uniformly assumed when speaking upon his Pure Beer Bills in the House of Commons.

Mr. Blain, the secretary to the committee, in an interview with a *Morning Advertiser* reporter, said the committee had discussed the subject of the admission of Press representatives fully, and, after all interchange of opinions had been exhausted, decided that it was against the public interest that the proceedings of the committee should be reported.

Asked if he would state the basis upon which the committee founded their determination, the secretary said:—"The committee came to the conclusion that, inasmuch as this is a committee appointed for the sole purpose of advising the Chancellor of the Exchequer as to the course which he should take in regard to the subject-matter of the inquiry, it would not be wise to have the proceedings published in the Press." Mr. Blain added that his committee would probably go upon the lines of the Licensing Commission, presided over by Viscount Peel, and in the first instance call for evidence from the Excise authorities. As to the class of evidence to be placed on record later on, "that,"

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said Mr. Blain, "must depend upon the extent and the kind of testimony offered."

The self-respecting members, including Mr. Clare Sewell-Read and Sir J. H. Gilbert, at least ought to resign as a protest against this "burking" and "Star Chamber" method of turning what ought to be a genuine enquiry into an enormous swindle of the public, to a farce designedly cast, produced and played to screen an incompetent and discredited Inland Revenue gang of blundering officials. Naturally the Excise gang of incapables and pseudo-analysts are on the side of secrecy, and it says little for the Earl of Pembroke's brains, courage or public usefulness that he should be content to play catspaw to this discredited gang of England's industrial enemies. At the outset it is a packed committee. As such we exposed and objected to it on its formation. We shall feel it our duty to frankly expose its findings to each member of the House of Commons when it has terminated the farce of its sittings.

#### THE SANITATION OF RAMSGATE.

THE many thousands who love Ramsgate and wish it prosperity will be glad to know that its Sanitary Authority is alert and has no intention of suffering a fate akin to that which befel Worthing not many years ago. Last week Francis Whittle was summoned, on the information of William David Millard, sanitary inspector, who said on September 29 he visited six houses in Central-road, from which defendant received the rent. He found all the houses in a very insanitary condition. The closet and drain in one house was entirely blocked, and the other closets were exceedingly dirty and defective. The plaster was falling from the ceilings in the majority of the rooms, and the rain was coming through the roofs. In one house every bannister had been taken away, and the hand-rail was quite loose and exceedingly dangerous. All six houses were without a supply of water. There were 68 persons living in the six houses, including children. He reported the matter to the Sanitary Committee, and received instructions to serve a copy of the notice produced upon the owner, which he had done, but the work had not been carried out. The notices were for laying on of the water, and when this had been done other notices would follow. Defendant had been appointed collector of the rent, and witness pointed out that the Public Health Act defined the owner as the person who, for the time being, received the rent of the premises. His application was for an order prohibiting the use of the premises for human habitation.—Defendant produced papers certifying that Mr. Preece had been appointed receiver of rent, and defendant had received it at Mr. Preece's request.—In reply to the Bench, Mr. Millard stated that the water had been turned off owing to non-payment of the water-rate.—The magistrates adjourned the case until Friday, and informed defendant that in the meantime he must make the houses habitable, or an order would be made.

#### FOOD AND SANITATION IN THE CITY OF LONDON.

DR. SEDGWICK SAUNDERS had the following record of woeful waste to make to the Commissioners:—The seizures of meat during the past three months have been of unprecedented magnitude, and afford abundant evidence that the increase in the number of inspectors sanctioned by your honourable court in July last was amply justified. During my tenure of office the monthly weight of meat seizures in any one month has only exceeded one hundred tons on five occasions, as shown below: June, 1881, 119 tons 3 cwt. 3 qrs.; October, 1891, 109 tons 3 cwt. 3 qrs.; August, 1892, 106 tons 7 cwt. 1 qr.; August, 1893, 124 tons 14 cwt.; August, 1896, 101 tons 4 cwt. 3 qrs. Whereas the weights actually delivered to the contractor during the

months of June, July, and August of the present year were for June, 138 tons 4 cwt. 3 qrs.; July, 151 tons 5 cwt. 2 qrs.; August, 146 tons 14 cwt. 3 qrs.; total for three months, 436 tons 5 cwt. These three months embrace only seventy-eight working days, so that the average seizures per diem amounted to five tons and a-half. Expressed in pounds, the 346½ tons give a total of 977,200 lbs., which, at an all-round price of sixpence per lb., would have yielded to the consignors no less a sum than £24,430, all of which has been lost to the trade by want of care or defect of calculation. During the month of June a large proportion of the meat seized was town killed, which had become putrid owing to the intense heat of the weather, to which we must add the country killed meat which had become tainted in transit. The same applies, although in a smaller degree, to the seizures for July, because during the last fortnight of that month a large proportion consisted of frozen meat from abroad. In August by far the greater quantity dealt with was foreign meat, which, I am informed, had been discharged (landed) from the ship in sound condition, but had become bad owing to an unusually long detention in the refrigerating chambers at the docks, or possibly undue exposure to the hot weather between the time of its leaving the vessel and its delivery to the cold-air stores on shore. This lamentable destruction of food still continues, since your inspectors have dealt with over one hundred tons of unsound meat between the 1st and the 19th of this present month of September, and we have already in these nine months exceeded the maximum seizure in any previous year. On the Saturday mornings of July 25th, and August 1st, 8th, and 15th, an enormous number of putrid foreign sheep which had been frozen were delivered in the markets, to an extent, I am told, which interfered with the ordinary trade of the salesmen. A large percentage of these sheep were entirely unfit for human food. The inspectors dealt vigorously with the matter; vans were hired at a considerable expense for the removal of the tainted meat to the premises of your contractor at Bow, and every possible precaution was adopted to separate the sound from the unsound in the shortest space of time. A point of considerable importance arises in connection with the distribution for sale of doubtful meat from the refrigerating chambers at the docks to the London markets and other commercial centres throughout the country without proper official inspection by the local sanitary authority. In my weekly report of October 8, 1895, I pointed out the danger of meat becoming soft during transit from the ship to the cold air stores, especially in very hot weather, and suggested that meat thus partially thawed never again acquired the same desirable firmness and immunity from putrefaction upon its being again frozen. I have since verified this on several occasions, and am more than ever convinced that the greatest caution should be observed in this change of storage, for although the outer surface of the meat may again become hard by renewed freezing, the elements of decomposition exist in the deeper tissues, into which the cold does not penetrate, and manifest their presence with astonishing rapidity when the meat is again exposed for sale at ordinary temperatures. This proposition may be fitly illustrated by the following occurrences, viz.: On Saturday, August 22 last, 800 sheep were sent to a leading firm of salesmen in the Central Market from the West India Dock refrigerators in such a disgusting condition that your meat inspectors were compelled to seize no less than 790 of them as unfit for human food. These 800 sheep form part of a large consignment which had been landed, ex ss. *Celtic King*, as far back as May 5, and retained in the cold chambers at the docks until they were sent to Smithfield. On the three preceding Saturdays—viz., August 1, 8, and 15—the same consignors sent 248, 898, and 396 sheep respectively in a rotten condition to the same salesmen, all of which were removed by your inspectors, and conveyed to Bow by your contractor for condemned



meat. As a consequence of some enquiries made by my direction by Senior Inspector Tarrett, the responsible owner of the sheep called at the office and stated that the whole of the above animals had on a recent day been examined by a Port sanitary inspector, who had passed them all as fit for sale. It follows, therefore, if this statement be correct, that the meat must have rapidly degenerated after that officers' visit.

**UNSOOUND FRUIT AND VEGETABLES.**—Contrary to our experience in former summers not a single case of unsound fruit or vegetables exposed for sale has been reported by your sanitary inspectors, although the usual supervision has been exercised.

**SALE OF FOOD AND DRUGS ACTS.**—Although I have very little to report under this heading we have not altogether been idle. The vacation has partly been the cause of this action, but the laboratory has been undergoing painting and repairing, and inaccessible for several weeks. The samples examined include five of milk, one of wine, one of bread, one of cooked ham, and two of drinking waters. None of these cases require your interference.

**CITY MORTUARY.**—835 articles of clothing and three cabs have been received at the disinfecting department, Golden-lane, disinfected by the keeper, and returned to the owners. Sixteen bodies were also received at the mortuary, and there kept in decent custody until the time of burial. Eight inquests were held at the Coroner's Court.

### WHY, WHEN, AND WHAT WE EAT.

BY SIR CHAS. A. CAMERON,

*Medical Officer of Health, Dublin; Public Analyst; etc.*

(Continued from page 490.)

PROCEEDING, he said the most abundant group of food materials were the carbo-hydrates—water and carbon. The next group was the group which they called albuminoids—albuminoids because the typical albuminoid was the albumen or white of egg; that, in addition to the elements present in sugar and starch, contained nitrogen, about 14 per cent., and also, in addition to the nitrogen, small quantities of phosphorus and sulphur, and minute quantities of some other bodies, such as potassium, calcium and two or three other bodies associated in some way with the albumen. These were the two great groups, in addition to the group of fats, which they might call equivalent to the group of hydrates. They saw how simple were the groups. The carbo-hydrates were the most abundant. Starch was diffused universally through the vegetable kingdom.

There were several kinds of sugar, several kinds of starch, hardly differing in composition—by only one or two molecules of water.

They had British gum on their postage stamps, dextrine, treacle, and glucose in the group. Then they had albumen, or the white of egg-bodies, also very abundant. When they washed away flour with water they had a viscous system which they called gluten, and that was albuminoid, the same, practically, as the white of egg.

Then they had, in addition, the substance called caseine, which was also the equivalent to the white of an egg. Thus they had all through the vegetable kingdom a substance different from starch and different from oils and fats, which they called albuminoids. They must use these to form their flesh, bones, and blood. They did not require so much of this substance as they did of the carbo-hydrates and of the fats. They could not do without the carbo-hydrates altogether. Men could live upon fats, as the Finns, and Lapps, and Eskimos did; or they could live upon starch and sugar, as the natives of the very hot countries, the Hindoos, very often did. But they must

have one or the other. Then they required some saline material. He would give them a rapid sketch of the process of digestion. They must first of all get their food. That was a problem that occupied the attention of the world at large. (Laughter.)

Having then got their food, the next thing was to cook it. When they were cooking the food, the object was to make the food more digestible. Man was not intended to eat raw food, as other animals were naturally intended to do. His food was, as a rule, improved by cooking. When they cooked vegetable food, the carbo-hydrates, the starch which formed a large proportion of bread, etc., and which were surrounded by little cases made of extremely hard material, were softened and fractured into innumerable pieces and rendered more easy of digestion.

And, as to meat, it might be cooked under circumstances under which much of the nutriment might be lost. If they were going to cook beef by boiling, and if it was the beef they wanted, and not the liquid in which it had been boiled, they should plunge it at once into boiling water. If they wanted only the extract, they should put the beef into cold water, and gradually subject it to the boiling process. Having then cooked their food properly, they must subject them to one of the most important processes he knew of, viz., the process of nutrition and mastication. In the animals that were purely carnivorous, such as lions and tigers, the jaws opened and closed like a pair of scissors. In other animals, such as sheep and oxen, there was an extraordinary arrangement of muscles, which made the jaws act like millstones. We had jaws which were of a medium character, and this proved that man was a carnivorous animal. (Applause.) Starchy food was insoluble in water, and when in their food it was subject to the action of fermentation. Nitrogen, which was an essential element of their food, was one of the most extraordinary of the elements. It would not unite with other bodies, and, when they brought it into forced union with other bodies, it was anxious to get away from these other bodies.

He did not know any explosive that did not contain immense quantities of nitrogen, that uneasy compound which afforded enormous stability to any of the compounds into which it entered as a constituent. They had a substance containing about 16 per cent. of that uneasy element produced by three pairs of glands, which discharged their contents into their mouths and over a large portion of the roof of their mouths, and on the back part of their tongue they had these little glands—little chemical laboratories—working away day or night producing this fermentative substance.

Then they had a substance which converted starch into sugar, and, when they ate their starchy food, the starch became converted into sugar.

If they took a large lump of sugar, supposing they were mixing a tumbler of hot grog—(laughter)—which he hoped they did not often do—(renewed laughter)—and they put it into the hot water, it would remain a long time without dissolving, and would remain a long time before fermentation took place.

If they put the sugar in the form of powder, it was dissolved with a turn or two of the spoon. Similarly, when food was taken into the stomach in too large lumps, the process of digestion was interfered with. He did not think anything was more important than that people, when they had lost their teeth, should go to a dentist. He had a great horror of shams, and in this respect he agreed with Ruskin. He preferred the roughest of poor stones to the polished paste; but there were some kinds of shams which were not only to be supported, but rather to be enjoyed. If a person lost his eye, out of regard to his friends and neighbours he ought to get a glass eye put in—(laughter)—and, in the same way, if he lost his teeth, he did not think he would break any principle of Ruskin in having them replaced.

(To be continued.)



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the Public of the United Kingdom.



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FROM CATTLE REARED IN AUSTRALIA AND SOUTH AMERICA.

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# Food & Sanitation

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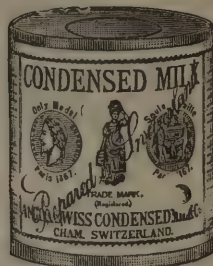
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Bound volumes of Vol. I., II., III. and V., with Index, may be obtained from E. W. ALLEN, 4, Ave Maria-lane, Paternoster-row, London, E.C. Price 5/- each.

Binding Cases for FOOD AND SANITATION, in cloth, gold lettered, may now be obtained from E. W. ALLEN, 4, Ave Maria-lane, London, E.C. Price 1s. 6d. each.

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## Food and Sanitation.

SATURDAY, OCTOBER 24TH, 1896.

### YEAST ADULTERATION SUCCESSFULLY PROSECUTED.

GERMAN thieves (and some Dutch thieves) have for years run the potato-at-yeast-price fraud, and, thanks to chemists of queer methods and suspicious reputations, and judges possessing more knowledge of dogs and racing than of law, the rogues have practised their unfair competition against honest yeast-makers, and pocketed their extra profits, feeling secure in their knaveries. The thanks of retailers and honest manufacturers of yeast are alike due to Deputy-Chief Constable Evan Jones for his successful attack on this foreign swindle. We need not say that the victim of

the Continental gang of potato-at-yeast-price thieves has our sympathy, inasmuch as he did not make the yeast, and no doubt bought it in good faith as pure, but his fate will be a warning to other retailers, and may save them from being similarly victimised. Now that this adulteration has been successfully prosecuted we trust to see the sale of adulterated yeast vigorously coped with in other places. The first appearance of Mr. Herbert Endell was recorded in our issue of September 26 last. The adjourned hearing was at Pontypridd Police-court on October 14, when Herbert Endell, confectioner, Trearlaw, was charged with selling two ounces of German yeast adulterated with potato starch to the extent of 20 per cent. The sample was tested by the public analyst, who certified that it contained of dry yeast substance 20·6, water 65·4, potato starch 14·0. Pure yeast contained no starch, and should contain about 20 per cent. of dry yeasty substance. The active ingredients were thus diminished to the extent of 20 per cent. by the addition of the starch. The case had been adjourned by the Stipendiary to allow defendant time to appear and explain. Defendant did now appear, and a fine of £2 was imposed.

### ABORTION: ITS AIDERS AND ABETTORS.

THE following advertisements appeared in the *Daily Telegraph* of October 21:—

**A** PIOL and STEEL PILLS, for females, a French remedy for all irregularities and obstructions, superseding bitter apple, pil cochiac, pennyroyal, etc. Price 4s. 6d., post free.—Obtainable only from Martin, Pharmaceutical Chemist, Southampton. Wholesale and export, Butler and Crispe, Clerkenwell-road, E.C.

**I** MPORTANT to LADIES.—Valuable and never-failing REMEDIES for all irregularities of the female system. Thousands of unsolicited testimonials (guaranteed genuine).—Send stamped addressed envelope to D. T. Dasmall, Langdale House, Walthamstow, London. Established nearly half a century.

**L** ADIES.—Dr. Mackay's marvellous MEDICINE gives relief in a few hours, and is safe, and certainly efficacious, 4s. 9d., post free (under cover).—Dr. Mackay, T.D.U.E., 104, High Holborn, London. Advice gratis.

**F** FREE to SUFFERING LADIES sending two stamps for postage, circulars and trial package of Dr. COONLEY'S FAMOUS SPECIFIC. Special agent.—Write only, O. L., 270, Fulham-road.

On October 19, the first three of these advertisements also appeared in the *Daily Telegraph*, and such advertisements may be regularly found in that journal and others. The persons thus advertising do not spend their money for nothing, and we can safely calculate that unless it paid them they would not pay *Daily Telegraph* charges day after day. Thinking, as we do, that the worse use one can put a child to is to abort it, seeing that we cannot get our Army or Navy sufficiently manned, we feel it is necessary to protest against these advertisements. They have a far worse effect upon the public than even the literary outrage Sir Edwin Arnold made himself a fool over, for the poem may or may not be "piffle," honoured by advertisement framing, but the pills cannot be misunderstood. They are meant to corpse the incipient kid. No really decent paper could publish these temptations to weak, fanciful, erring, or foolish women. Save for its glaring illiteracy, and assistance, by advertisements such as those instanced, to persons who would prevent the unwanted troubling the world with their presence, the *Daily Telegraph* is in the main well meaning, if stupid. Recognising this, we think it well to direct its attention to a case last week at Luton, wherein the person alleged to have administered drugs, etc., to a woman seeking abortion was the recipient of a verdict of wilful murder by a coroner's jury. Mr. F. W. Beck, a very able solicitor, as we should gather from the questions he put, asked this, "Have you no knowledge at all as to where she got the bitter aloes from?—I have not, sir."

As the *Daily Telegraph* boasts of circulating some millions of copies per week, we do not suppose that,



from the samples quoted of its advertisements, any person seeking to be relieved of "an irregularity" would have any difficulty in purchasing privately a drug for the purpose. But with all these "largest circulation in the world" facilities for procuring abortion, we find a coroner's jury recording a verdict of wilful murder at Luton, and considering it surprising that a woman could be possessed of bitter aloes when, to their indelible shame be it said, three-fourths of the press of England, Ireland, Scotland, and Wales contains the suggestive advertisements in almost every issue. The men to return a verdict of wilful murder against are the editors and proprietors of the journals which insert these incentives to "corpsing incipient kids." We think the Luton jury made a mistake, for, without the publicity the Press gives these shameful advertisements, the trade in dangerous drugs would not flourish as it now does.

#### OBJECT LESSONS FOR ENGLISH HEALTH RESORTS.

WE do not know the Lowestoft Medical Officer of Health, but he seems very up to date. He knows, for instance, what pure milk ought to be, the ignorant analytical tinkering that Somerset House has done with it, and that department's cloaking of swindling infants of the full nutriment milk ought to possess. The Lowestoft Medical Officer of Health has also the faculty of terse and accurate expression, as all who know anything about Somerset House and milk will readily see. Alderman Beckett, at the last meeting of the Lowestoft Town Council, moved that the man who owned a sample of milk numbered 227 should be cautioned, 10 per cent. of skim milk having been added. In another sample 16 per cent. had been added, and he moved that, as this person had been detected before, a prosecution be instituted.—Mr. R. Leach thought they ought to hesitate before prosecuting. These cases came in the month of October, and the apparent want of quality was often owing to the time of year, when cattle were put on change of feed, and the elements were against them. He thought that on one occasion they punished an innocent man and drove him out of the trade. That ought to have taught them wisdom.—Alderman Beckett said three other samples which were taken were genuine milk.—*The Medical Officer of Health said that the standard of the analysts was that of Somerset House, and any cow that gave milk of this standard would die of disgust.* (Laughter.)—The motion to prosecute was carried.

One deduction may safely be made from this, viz., that mothers need have no fears about milk for their infants at Lowestoft whilst this medical officer is about. Another thing we may justifiably assume is that Lowestoft has a medical officer who knows his work, and apparently does not lack the courage to say the right thing. It is such men who earn abiding reputations and public confidence for health resorts, and we could do with more of them. Less English money would be squandered in foreign consumption-giving death-traps like Mentone; and in place of newspaper puffing the anti-English-Englishman who knows nothing of the health resorts and beauty-spots of his native land, but can prate of tying himself with ropes and exhibiting his full-blown asininity *plus* alpenstock, guides, and the rest of the tom-foolery, on some mountain in Switzerland—in which foolhardiness the chamois or a little bird can, without guides or paraphernalia, beat him—we would like to see a little common sense have a chance. How many of the toadies and half-baked swells, who haunt Homburg because the Prince of Wales may be seen there, know anything of English health resorts? We would rather see English money spent in England, and those expending it learning to appreciate the fact that in baths, mineral springs, delightful scenery, and real health resorts we have all

that is needed. We require two things to bring this about—sanitary officers who will make and keep healthy our health resorts, and Town Councils who are alive to the wants of pleasure and health seekers. Lowestoft has apparently the one. It ought not to be long in setting about obtaining the other; for it is nothing but want of energy that renders many bracing health resorts so dull that English pleasure and health seekers prefer less healthy foreign ones in which to spend their money. It is the same spirit which causes the finest promenade in Europe—the Thames Embankment—to be almost wasted. It is the same spirit which causes London, the Mecca of the English-speaking race, to be the hideous city it is, in place of being the show city of the world, as the real capital of the world ought to be. Ought it not to stamp with indelible disgrace the city fathers responsible for the well-being of Southend that Dr. Bruce Low, investigating the subject for the Local Government Board, finds it necessary to say:—

"Southend has for some years suffered from the persistent presence of typhoid fever and diphtheria. It has not, in fact, been free from either of them for a long time. In the autumn of 1890 a severe outbreak of enteric fever occurred, and since then hardly a month has passed without the notification of several cases. The total for the six years is 751. It is said that the number ought not to be so high, because one of the medical practitioners in the town has been in the habit of notifying, as typhoid, cases which other doctors would pass over; but there is very little in this objection. The gentleman in question is a competent man, and his patients were undoubtedly ill of a fever closely resembling typhoid. The fact of the illness is a good deal more important than the name. With regard to diphtheria, the case is not so bad. There has been no very severe outbreak, and since 1892 the annual returns show a gradual diminution. But nevertheless the disease persists, and that is the serious point.

"As to the causes, it is satisfactory to know that both the water supply and the milk, which are usually associated with these two particular maladies, are exonerated. The water is obtained from deep wells in the chalk, and found to be pure, while there is no evidence to connect milk with the diffusion of illness. On the other hand, oysters are not free from suspicion. They are kept along the foreshore, where they are liable to sewage contamination, and several cases of typhoid appear to have been definitely traced to their consumption. But the real culprit is our old friend the drainage, as might be expected from the steady persistence of disease without any very marked outbreaks. When water or milk is contaminated several persons are generally attacked at the same time; when the infection lies in the ground its activity is less violent, but more persistent—that is to say, endemic instead of epidemic. In Southend the drains are 'all wrong.' The conditions appear to be very similar to those that prevailed in Grimsby at the time when it became a focus of cholera three years ago; and in Grimsby they caused just the same sort of permanent liability to typhoid. Some of the sewers are tide-locked, with the result that sewage escapes into the surrounding soil and occasionally floods the basements of houses; and many of them are badly laid, and leak, so that the ground is more or less saturated. To this 'sustained befouling' of soil Dr. Bruce Low attributes 'endemic prevalence and seasonal development of enteric fever in Southend.' Happily these defects are in process of being remedied. The town authorities, after fighting for years against the inevitable, have now adopted a wiser policy, and are seconding the efforts of their very competent and active medical officer. If they do their duty, the increased prosperity of the town will not fail to reward them."

Southend should benefit by the example of Worthing, and never forget that of all money spent none is so wisely disbursed as that devoted to sanitary advancement.



## A POINT FOR BEDFORD.

THE *Bedfordshire Advertiser* records the case of Emma Cave, 104, Langley-street, Luton, who was summoned by Charles Wright, Inspector under the Food and Drugs Act, for selling milk deficient in fat to the extent of 27 per cent., as certified by the public analyst, Mr. A. E. Ekins.

The Town Clerk, Mr. George Sell, said they had no wish to press for a heavy penalty, but it was the duty of the Corporation to bring such cases before them.

A fine of £1, including costs, was imposed, that being the first offence. The Clerk said that further offences would be more seriously dealt with, for the Bench were of opinion that the milk had been skimmed.

Our contemporary missed a great opportunity. It might have pointed out that Bedford's Town Clerk has forgotten what a prosecution for adulteration is: that any persons might sell milk skimmed, watered, drugged, or tampered with just as they pleased in Bedford, and their swindles could grow blue-mouldy without the gang who run Bedford ever stirring a finger to stop them, and that persons who practise the faith that cant and roguery should flourish will find Bedford an unique forcing-ground. Bedford has many schools of the "prunes, prison, and potatoes" order, and more than its share of Mrs. Pipchins, and that scholarly young lady, Miss Blimber, who was dry and sandy with working in the graves of deceased languages. Miss Blimber was even better than Bedford and the Adulteration Acts, for with her "the languages must be dead—stone dead—and then Miss Blimber dug them up like a ghoul." Bedford may look at the subject from a Blimber point of view, and like all that is dead, but it is a rascally shame and hard upon the living, whom free fraud can rob and injure with impunity. Bedford has had the Adulteration Acts dead—stone dead—for years, but has evidently no intention of digging them up. Parents who send children to Bedford's schools should realise the meaning of this state of things upon Bedford's food supply.

## PARAFFIN WAX IN CHILDREN'S SWEETS.

It does not matter to J. D. Rockefeller and the rest of the crew who compose the American Oil Gang that they cause to be roasted alive one person per day by their monopoly of England as a dumping ground for refuse American paraffin oil. Neither does it apparently concern the "boss" of the paraffin wax trade that confectionery should be made unwholesome. We are pleased to find that in Birmingham the authorities are alive to this abominable danger to the health of children, and we trust other places will follow that city's good lead off.

At Birmingham, on Oct. 16, before Messrs. Ryland and G. Tangye, Thomas Hackleton Walker, confectioner, Bristol-street, was summoned for selling chocolate chumps which contained 3 per cent. of paraffin wax, an article injurious to health. Mr. Hiley (from the Town Clerk's office) prosecuted.—Mr. Cochrane, who defended, said there were three cases to be heard. The defendants had undertaken not to use paraffin wax in sweetmeats in future. He suggested that justice would be served by the payment of costs.—Mr. Hiley explained that paraffin wax was very dangerous to health, and the Health Committee had brought the case forward to protect the children of Birmingham. He asked for convictions.—Henry Jones, inspector under the Food and Drugs Act, said he bought two pennyworth of chocolate chumps from Walker's shop, and submitted a portion to Dr. Hill for analysis, and his certificate showed that the portion contained 3 per cent. of paraffin wax and no chocolate.—Dr. Hill said that the wax was probably more indigestible than indiarubber or a paving-stone. (Laughter.) It was liable to set up inflammation of the bowels and cause stoppage. Candles were made

of the wax. During the summer a case was heard in the district in which the jury attributed the death of a child to the substance.—Mr. Cochrane, having again repeated his promise that the wax would not be used in future, explained that the sticks of sugar were merely dipped into the wax, and the coating preserved them from damp. In future the sugar sticks would be wrapped in paper instead of being dipped in the wax.—The Magistrates considered that the offence was a serious one, but said that in imposing the fine they had taken into consideration that it was the first case that had been brought, and that the use of wax would be discontinued in future. Defendant would be fined 40s. and costs.—Joseph Daniel Rowley, 11, Jamaica-row, was fined a similar amount for selling chocolate chumps containing 5½ per cent. of paraffin wax, and Alfred Hull, Jamaica-row, was fined 40s. and costs for selling chocolate containing 3½ per cent. of paraffin wax.

## BORIC ACID IN MILK: AN IMPORTANT CONVICTION.

A CASE, the effect of which ought to be far-reaching, was heard by Birmingham magistrates on October 16. It was a prosecution for adulteration of milk by boracic acid, and was heard by Messrs. Colmore (Stip.), Ryland, Tangye, Warden, and Phillips. Ellen Goodall, milkseller, Osler-street, was summoned for selling milk containing boracic acid. Upon a sample of milk, purchased from the defendant, being submitted to the public analyst, it was proved to contain boracic acid at the rate of sixty grains to the gallon. Dr. Alfred Hill, public analyst, said that boracic acid was used in milk as a preservative, and was injurious to health, causing irritation of the stomach, indigestion, and diarrhoea, and was a nerve depressant. It was especially injurious to children. It was the opinion of Sir Andrew Clark and other eminent physicians that many diseases, the origin of which doctors were unable to trace, were attributable to the use of these antiseptics. Defendant said that she sold the milk in the same condition in which she purchased it. This being the first case of the kind brought before the Birmingham magistrates, the Bench inflicted a nominal penalty of 1s. and costs. This is a very important step in the direction of securing absolutely pure milk, and putting a stop to surreptitious drugging of food by milkman, butterman, baconman, brewer, etc., which has of late years become so widespread. The Birmingham authorities deserve the thanks of the public for thus showing how the evil should be coped with.

## MORE SPURIOUS VINEGAR.

GEORGE H. RAMSKILL, general dealer, 3, Thompson-road, Seaforth, was summoned on Oct. 17 for selling as vinegar what was certified by the county analyst to consist of dilute acetic acid coloured with burnt sugar, and containing no genuine vinegar. The officer who proved the case said he was informed after the purchase had been made that it was "wood vinegar," and he was shown a receipt for a cask containing six gallons of acetic acid and a similar quantity of malt vinegar, which defendant said referred to the vinegar purchased.—A fine of 5s. and costs was imposed.

## VINEGAR ADULTERATION.

DEPUTY CHIEF-CONSTABLE EVAN JONES, Pontypridd, is untiring in his efforts to suppress fraud in food stuffs. At Pontypridd, on October 14, Mary Bevan, wife of William Bevan, who kept a shop at Trealaw, Rhondda Valley, was charged with selling adulterated vinegar. Deputy Chief-Constable Jones purchased vinegar, which Mr. Clarence A. Seyler, B.Sc., F.I.C., public analyst, certified contained acetic acid 1.59, water and extractive matter 98.41. Genuine vinegar should contain at least 3 per cent. of acetic acid. The sample was of the



strength of vinegar mixed with an equal volume of water, and coloured to the same degree of ordinary vinegar. The sample was also of very inferior quality, being devoid of aroma and the flavour of genuine vinegar, and in the analyst's opinion not made by vinegar brewing, but by diluting and colouring strong acetic acid. No change or adulteration had taken place in the sample to affect the analysis. The Deputy Chief-Constable said that the vinegar should have contained at least 3 per cent. of acetic acid. The Bench said the vinegar was not vinegar at all, and fined defendant £1 and costs.

#### THE ALLEGED POISONING BY QUAKER OATS.

THE Bradford Medical Officer of Health has reported having made inquiries into the case of suspected poisoning by Quaker Oats and cream at Allerton, but that, on account of delay in acquainting him of the matter, it had not been possible for him to find any trace of poison. He also submitted report of analyses made by Mr. F. W. Richardson, who had also been unable to find any trace of poison. Instructions were given to Dr. Evans to issue a circular to the medical gentlemen in the borough requesting them immediately to inform him of any case of poisoning coming under their notice, in order that he may, at the earliest moment, make inquiries regarding same.

#### MEAT PROSECUTIONS.

AT Bootle, on October 15, George Dean, a butcher, carrying on business at 186, Irlam-road, was summoned for exposing, on the 3rd inst., 2½ lbs. of meat which was unsound and unfit for human food. Mr. J. H. Farmer (Town Clerk), who prosecuted, stated that, though the quantity of meat was very small, it was in an extremely bad condition, and he had received the instructions of the Corporation Health Committee to press this aspect of the case upon the attention of the Bench. The meat was found lying on a board in front of the shop, and in such a condition that anybody passing would obviously think it was intended for sale. At the time the meat was seen it was positively green and stank abominably, the smell being quite strong enough to arrest the attention of anyone standing in the shop. He (Mr. Farmer) pointed out that it could not be urged as an excuse by the defendant that the weather was bad for keeping meat, as the weather at the present time was particularly good for butchers. As a matter of fact, his instructions showed that the meat was so bad that it must have been green and stinking for at least two days.—Mr. Dalay, the Corporation sanitary inspector, said that the meat stank horribly, and must have been in this rotten condition for two days. He obtained an order condemning the meat, which was destroyed.—Inspectors M'Culloch and Owens also gave evidence as to the bad condition of the meat.—The defendant, who did not appear, was represented by his manager, who stated that he was at the shop on Friday evening, and the meat then seemed to be all right.—The Bench considered it a very serious case, and fined the defendant 60s. and costs, or, in default of payment, one month's imprisonment.

#### THERE IS TOO LITTLE ATTENTION PAID TO COFFEE HOUSES AND RESTAURANTS.

AT Westminster Police-court, on Oct. 14, Joseph Millis, of 23, Little Chester-street, Pimlico, appeared in answer to a summons taken out by the Vestry of St. George, Hanover-square, for selling milk that had been adulterated by the admixture of 25 per cent. of added water.—Mr. S. Hitchens prosecuted on behalf of the Vestry.—Defendant said he was sorry he could not

contest the charge. He had been thirteen years carrying on business in the West End and this was his first offence. He could not account for the offence. He had five servants, and since this had occurred he had missed several things.—John Walker Whipp, assistant inspector in the employ of the Vestry, said that on September 24 he entered defendant's shop and asked for two glasses of milk. He got the milk and paid twopence for it. He then told defendant that he was an inspector under the Food and Drugs Act, and that he had purchased the milk for the purpose of having it analysed by the public analyst, and offered to divide it into three parts, which offer was accepted by Mr. Millis. He then divided the milk in the defendant's presence. Defendant conducted a coffee-house and dining-rooms, and sold the milk in pennyworths to his customers. The milk contained boracic acid for preservation purposes.—Mr. Sheil imposed a fine of 20s. and 12s. 6d. costs.

It would be interesting to know, for example, when a sample of milk, butter, spirits, etc., was taken for analysis from City restaurants.

#### EXCESS WATER IN BUTTER.

AT Birkenhead, on October 15, Thomas Birtwistle, grocer and provision dealer, Formby and Freshfield, was summoned, under the Food and Drugs Act, for selling butter which was abnormally adulterated with water. Mr. F. A. Jones prosecuted, and Mr. S. A. Ashington defended. Mr. Jones stated that on the 10th September, Mr. James Parkinson, inspector for the Royal Lancashire Agricultural Society, working in conjunction with the Lancashire County Council, visited the defendant's shop and purchased three-quarters of a pound of 1s. butter. This he divided in the usual way, and sent a portion to Mr. Collingwood Williams, the County Analyst. Mr. Williams stated that the sample contained 19.88 per cent. of water. The maximum quantity of water in properly-made butter should be, in his opinion, 15 per cent. The inspector valued the butter at about 7½d. per pound. In defence, Mr. Ashington suggested that there was no fixed legal standard of the amount of water that could be put into butter, and no one had yet been able to find such a standard. In the absence of a fixed standard, and in the absence of any proof of the butter having been tampered with, he submitted that their worships ought not to convict. Again, section 25 of the Act said that if the butter demanded from the defendant by the prosecutor was the same in nature, substance, and quality as that previously purchased by the defendant, the latter should be discharged from the prosecution. The defendant was sworn, and stated that he purchased the butter from Messrs. Robert J. Haynes and Co., of Cork. It came to about 11d. a pound, and he sold it for 1s. He got no written guarantee with the butter, but there was a stamped guarantee on the cask. Mr. Ashington contended that that was sufficient. At this point Mr. Barron (one of the magistrates) remarked that Mr. Ashington's contention with regard to the fixed standard of water in butter meant that any quantity of water could be added without an offence being committed. After a long consultation the Bench dismissed the case.

#### WATER AT SPIRIT PRICES.

##### THE NOTICE DODGE.

AT the Louth County Police-court, on October 14, William East, of the Stag's Head Inn, Burwell, was charged with selling whisky under proof on August 25.—Supt. Rippin deposed to being supplied by the defendant's wife with a pint of whisky, for which he paid 2s. 4d. He informed her that the whisky was for analysis, and she said, "Have you seen the notice in the front room?" and he replied that he had come in



by the back way. She proceeded to the front room, and there showed him a notice to the effect that all spirits sold there were diluted with water. Witness said, "I cannot take any notice of that now; had you drawn my attention to it when I asked for the whisky, or before I had paid for it, I should have taken notice of it." A portion of the sample had been analysed by Dr. Muter, who reported that 29·2 per cent. was water, or 4·2 per cent. above the permissible limit.—Defendant said that the notice, which he produced, had been over the mantelpiece for two years, and had the Superintendent entered by the front door, he would have seen it.—The Bench dismissed the case on payment of 2s. 6d. costs.

### SOME SENSIBLE FINES AT LAST.

ON October 16, at the Blaina (Mon.) Petty Sessions, Joseph Chivers, of the Fountain Inn, Abertillery, was summoned by Thomas E. Serjent, inspector of food and drugs for the Monmouthshire County Council, for having sold adulterated whisky and gin. Certificates from the analyst, Mr. Thompson, showed the whisky to be 31·44° under proof, and the gin to be 38° under proof. The magistrates fined the defendant £2 and costs in each case, being £5 17s. in all.

MRS. ANN RALPH, South Wales Inn, Cwmillery, was also summoned for selling adulterated whisky and gin. The inspector put in the analyst's certificates, which showed the whisky to be 35·57° under proof, and the gin to be 49·40° under proof. After taking into consideration certain interesting circumstances, the magistrates decided to impose similar penalties to the previous cases, £2 and costs in each case, a total of £5 17s.

### LORD RAYLEIGH'S DAIRY SUPPLY AND ADULTERATION

AT Edmonton Petty Sessions, on October 16, before Mr. J. Pedley and other justices, Charles Kitching was summoned by Inspector Bridge for selling milk a portion of which had been abstracted, so as injuriously to affect its quality, without disclosing the fact to the purchaser. Mr. Bridge said he went to the shop of the Callow Park Dairy Company, 877, High-road, Tottenham, on the 24th ult., and there saw the defendant, from whom he purchased a pint of new milk. The witness then said that he was an inspector, and that the milk was for purposes of analysis. It was divided in the usual way, one portion being submitted to the public analyst, whose certificate was now produced, stating that 12 per cent. of the fat had been abstracted. The manager of the shop where defendant was employed as assistant swore that the milk in question had been received from Lord Rayleigh's farm in a churn to which a warranty was attached. The defendant was also sworn, and denied that he had tampered with the milk from which he had supplied the inspector; and, in cross-examination, he said the company did not sell cream, and had no separator on the premises. Mr. Jarvis, the proprietor of the company, applied to be made the defendant in the case, which was refused. Having been sworn, he said that the milk had been received from Lord Rayleigh's farm in Essex, and was sold to his customers exactly in the same condition as it was received. He had no skimmer, and had never bought a pint of separated milk. He paid Lord Rayleigh a higher price than farmers, but had had many bad samples, and in the present case he had demanded compensation for the trouble and expense occasioned. The witness added that he did not care about a fine, but his character was at stake, and if these proceedings were reported it would injure his reputation. The Bench considered it a very bad case, and imposed a fine of £5 and costs, in all £6 1s. 6d. The witness exclaimed, "Does this decision imply that my oath is not believed? I have been scandalously treated!" He was ordered

to leave the Court. Mr. Ricketts, who watched the case in the interest of Lord Rayleigh, said if an opportunity had been afforded he could prove that all the milk which left Lord Rayleigh's farm was of the highest possible standard.

### AN OBJECT LESSON FROM CANADA.

DURING the present Session of the Dominion Parliament a vote of £6,000 has been obtained to enable the Dairy Commissioner to make advances on butter and cheese. The Government official will practically take charge of the sale of the products, and recoup the Government out of the money realised. Another vote of £4,000 was granted to enable fresh-made butter to be placed on the English markets in regular shipments. Endeavours are to be made to promote the recognition of the quality of the Canadian butter, in order that it may take up a proper position, in view of the competition that exists from various sources.

### THE MARGARINE CRUSADE.

LORD EBURY last week said:—"A preparation like margarine, which so seriously competes with the cheaper qualities of butter, naturally raises inimical feelings on the part of butter producers in this country and elsewhere, and to these a handle for agitation has been afforded by the discovery that here and there an unscrupulous trader has mixed margarine with butter, and has sold the blend under the name of the higher-priced component.

"Under the plea of putting a stop to this fraudulent practice, which the laws of every civilised country, if properly administered, would reach, an endeavour has been made to smother legitimate competition under the weight of oppressive legislative enactments. That endeavour was not successful. In Holland, in Belgium, and in Germany it has been made clear that margarine is to be allowed to stand on its own merits, unhampered by oppressive restrictions either on its manufacture or its sale, and in this country, though a majority of the Committee on Food Products Adulteration, which sat last session, introduced some objectionable recommendations into its report, these recommendations were not endorsed by the Chairman, who represented the Government on the inquiry, and I do not think there is much fear of any legislation being founded on it, either by the present or any succeeding Government. We live in an age of competition. Shrewd heads are unceasingly at work upon the attempt to gain a share in anything which seems to be remunerative in the boundless domain of trade. But the combinations which shrewdness suggests do not always turn out to be of practical value. For instance, there was a talk some time ago of Argentine butter being shipped to this market in quantities and at prices which would send margarine to the cool shades of neglect. I am not aware upon what data the suggestion was founded, but two circumstances have happened already to demonstrate its futility. To one of them—viz., the material effect which cheapness exercises upon the price of raw materials used in the manufacture of margarine—I have already referred. The other is the fall in the gold premium at Buenos Ayres. Last year that premium averaged 235, but the latest quotation I have seen is 182, and the effect is this—that whereas last year, say, 100 dols., although the expression is not numismatically correct, sent in payment of Argentine merchandise were worth to the Argentine manufacturer 335 dols., paper, he now finds himself with only 282 dols. paper available for his purchases. Hence, if his industry is to be remunerated, his produce must realise a figure at which it would have no claim to compete with that which is the main feature of this company's business. Australian butter likewise has been mentioned as a possible rival; but the developments of inter-colonial trade



are beginning to restrict Australian exports, and, in any case, good butter from Australia, if forthcoming, would be contracted for here at a much higher price than is needed to make a satisfactory return to the margarine industry."

Put into plainer English, good margarine can stand on its own merits, and we know that it is far superior to much of the butter now sold to the public. We have, again and again, proved that Danish, German, French, and other butters contain margarine. Our Government chemists admitted that they could not detect less than 18 per cent., and foreign butter factors in Denmark, Brittany, Germany, etc., know this as well as we do, and they practise the swindle without risk. All this so-called butter is really margarine by Act of Parliament, but the honest wholesome article that sells as margarine is to be penalised that the spurious butter fraud may flourish. The rottenness of the entire argument is too apparent. We have proved that margarine is healthier, and better value than butter as generally sold. The only advantage butter has is its *bouquet*, and the working classes who consume margarine don't think enough of *bouquet* to pay an extra sixpence or eightpence per pound for it, and in addition pay butter price for an extra six, eight or ten per cent. of water made to stand upright, with which thousands of tons of butter are adulterated. The truth is, the crusade against margarine is all bunkum, and scientifically it has not an atom of justification save this, that the person who asks and pays for butter should get it. This the law could do without making an ass of itself. The *gourmet* will prefer butter to margarine, but the poor man's fourpence or sixpence per pound is of more importance in the average house than posing, fancifulness, or real taste. The saving can add another dish to the meal or pay for a child's schooling.

#### COMMON SENSE AT YORK.

SOME months ago we commented on the folly of York guardians in using tinned meat. We are glad to find our advice has borne fruit.

At the last meeting of the York Board of Guardians the House Committee's minutes contained a recommendation that fresh English meat be substituted for the tinned meat used in the House. It said that the latter was not popular with the inmates, and it had been ascertained that the fresh meat, going further in the preparation of the dinner, as was pointed out by FOOD AND SANITATION, its use would not incur increased expense. The recommendation was adopted unanimously.

#### THIS PERSON SHOULD TRY A PASTEUR FILTER.

THE following very sorry report is made by the *Evesham Journal*: "Some short time ago the Evesham Rural District Council received a complaint about the bad quality of the water supply of a certain cottage in the village of Norton, and, after analysis, the water was

condemned. The District Council then called upon the owner to provide a wholesome supply. In order to carry out the wishes of the Council, the agent of the property provided the cottager with a filter, which he said rendered the water perfectly pure and tasteless. Unfortunately, the sanitary inspector and medical officer of health do not agree with this, the former stating that the water was nearly as bad after it had been filtered as it was before. The ingenious agent, who thought to escape his liability thus cheaply, must have had a poor opinion of the capabilities of the members and officers of the Council, for he must have known that no amount of filtering will render water which is totally unfit for domestic use—as this water appears to be—"pure and tasteless." Ordinary filters merit this condemnation, but a Pasteur Filter would make the water germ-free.

### CORRESPONDENCE.

#### A POINT IN MILK ADULTERATION LAW.

To the Editor of FOOD AND SANITATION.

SIR,—In your issue of October 10 last you have a report of some cases which were dismissed at the North London Police Court recently. Mr. C. V. Young, who represented one of the defendants, is reported to have remarked that he had never seen any certificates in that Court in similar form.

This must be an error, because Mr. C. V. Young raised the same point on a similar certificate at a previous sitting of the Court, before Mr. Bros, in my presence, and I was able to explain to the magistrate that my certificate gave the necessary data upon which the calculation of added water was made, viz., the amount of non-fatty solids contained in the sample. Mr. Bros, after hearing my explanation, stated that he was satisfied my certificate complied with the judgment of Mr. Justice Hawkins and Mr. Justice Kennedy.

Mr. Young is also reported to have stated that my certificate simply set out that the sample contained 92 per cent. of milk and 8 per cent. of water. This must be a reporter's error, because my certificate also stated "This opinion is based upon the fact that the sample contained only 7.86 per cent. of non-fatty solids, whereas normal milk contains at least 8.5 per cent. of non-fatty solids."

I may add that my certificates were all in exact conformity with the form recommended by the Council of the Society of Public Analysts, and drawn with the desire to fully and freely conform with the spirit of the judgments of the learned Judges in the case of *Fortune v. Hanson*.

LEO TAYLOR, F.I.C.,

Public Analyst for Hackney, etc.

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## AN HONEST STATEMENT FROM AMERICA ON THE FLASH POINT OF MINERAL OILS.

WE take the following terse exposition of the flash-point question from the *Chemical Trade Journal*. Our readers will see that the truths we stated upon the flash-point controversy are here, with a few exceptions, corroborated. The exceptions are the proofs we advanced that the American oil gang were convicted contrivers of arson, explosions and murder. The proofs of these are in the records of American criminal courts, and the Select Committee of our House of Commons would better understand the causes of certain evidence if they had the proofs in question before them, for they would see beyond possibility of denial that evidence in favour of Abel's 73<sup>rd</sup> murderous flash-point really emanated from a gang of the most hypocritical scoundrels unhung, whose crimes we have alone in England exposed. Unlike the *Mark Lane Express* on the "Pure Beer Question," we are not grasping enough to claim that "we alone did the exposure of the whole question." We only wish there were more journals like *The Chemical Trade Journal*, capable and outspoken, and the guns of the American oil villains would be the sooner spiked. A life a day is no small thing to seek to save, not to mention the hundreds of thousands of pounds lost yearly by fires caused by this refuse American oil. To its credit be it said it is not apathy on the part of our daily papers that leads them to ignore this daily roasting alive of English men, women and children. It is merely ignorance, for as the editor of one leading London daily paper lately remarked to the writer, "We don't express an opinion about the subject because we don't understand it," which sounded queer from a potential swayer of public opinion. If it had been the fact that some American title-buying duchess had the indelicacy to announce through the public print that she was in the family way—an announcement which no decent untottering journal should publish—the great editor would have known more than all about it, and have ornamented the indelicacy by a little imagined scandal about possible royal unsuspected parentage. But of such are great editors, and they find it easier to adjectivise over Armenia. With this introduction we give place to an excerpt from our contemporary.

## AN AMERICAN VIEW OF THE PETROLEUM QUESTION.

To the Editor of the *Chemical Trade Journal*.

"SIR,—Your admirable exposition of the merits of the demand that the Flash Test of oil be raised has been read with approval here by those familiar with the facts. That a people with the high regard of the English for the sanctity of life, and with their intelligent insistence upon every possible sanitary and police regulation for the protection of the public health and safety, should allow their market to be made the dumping ground for refuse American oil is something we, here, utterly fail to comprehend. This oil, known here as 'export oil,' is literally refuse, as it is what is left after the good illuminating oil has been refined out of petroleum. As has been shown by Government investigations here, notably by the *New York Legislative Committee*, which in 1879 investigated the Oil Trust, *forty per cent. of the illuminating fluids obtained from crude petroleum is of this inferior sort*. It is known as 'export oil' because there is not one American city or State which will permit its sale. It is as explosive in a hot room or on a hot day as dynamite. It is a matter of vital importance that a market be found for it somewhere. Hence, being prevented by law from selling it in America, where its dangerous character is known by everyone, the Oil Trust ships it to England, where no one but the experts know what it is—and the experts, knowing it, favour, for some mysterious reason, its unrestricted sale. It is often said that the fully exploited scandal of the corruptions and oppressions worked by

the Oil Trust in America throws a dreadful light upon our political and commercial conditions. But the Oil Trust has never yet been able to do in America what it does in England—with the help of English experts—viz., scatter death through the homes of the people by the sale of refuse oil. It does this in England, at a cost of a life a day of man, woman, or child, not by the tolerance, but by the explicit and uttered permission of the British Government, acting upon expert and knightly advice. What sort of 'light' that throws upon the 'political and commercial conditions' of Great Britain is a question often asked among us. The American Press, daily as well as weekly, cosmopolitan as well as provincial, has exposed from the beginning, and is still exposing, the encroachment of the Oil Trust and other trusts upon the liberties and prosperity of the people. With the honourable exceptions of the *Chemical Trade Journal* and *FOOD AND SANITATION*, I have never seen an English weekly that touched this question in its editorial columns, and never an English daily. Even the Socialist papers are mute about this sacrifice of English life—one a day—on the altar of the greed of a foreign invader, though they are searching every field of industry for illustrations of 'capitalistic greed.'

"The only two arguments that are advanced to defend the sale of this refuse American oil in England are an insult to the common sense of your people, but they illustrate perfectly the cynical contempt of the monopolists for the intelligence of the people.

"The first argument is, that the demand that the Flash Test be raised, so that only safe oil shall be sold, is simply a scheme of the Scotch refiners to get 'protection' against American competition. Knowing that 'protection' is the most unpopular word in Great Britain, our oil trust, with characteristic cunning, seeks to fasten it on this effort to protect British lives against its deadly product. But how singular! The great oil trust, which boasts in one breath that it makes the *best oil at the cheapest price*, whines in the next breath that to *compel* it to sell safe oil is 'protection' for its competitors, and discrimination against itself!

"The other argument is that 'the lamps are at fault, not the oil.' If the English people are using bad lamps, is not that all the more reason for allowing only such oil to be sold as will be safe in such lamps? That bad oil should be licensed because bad lamps are in use is certainly exquisite nonsense, and yet that is what the arguments of some of your experts boil down to.

"The Flash Test of their wits, not to say consciences, should be raised as well as that of this refuse oil they are defending.—Yours, etc.,

"A STUDENT OF THE OIL TRUST.

"New York, Sept. 8th, 1896."

## ONE GONE!

SIR SOMERS VINE has formally resigned his position as Assistant-Secretary of the Imperial Institute, and is about to transfer his energies to a large colonial commercial enterprise, says a daily paper. Sir Frederick Abel has as yet made no announcement of any kind.

## WHY, WHEN, AND WHAT WE EAT.

By SIR CHAS. A. CAMERON,

Medical Officer of Health, Dublin; Public Analyst; etc.

(Concluded from page 502.)

He would enjoin any of them present who had the charge of children to see carefully to the condition of their teeth, for it was largely owing to imperfect mastication that many forms of life-long indigestion were due. (Applause.) The preservation of the teeth was one of the prime requisites in connection with our health, and



no subject could be more brought under the notice of a sanitary meeting than the desirability of preserving our teeth. When we masticated our food and got it into the stomach, it was subjected to a process of churning—the contents of the stomach were moved up and down. Pepsine was introduced into the stomach, and the toughest piece of beef would be dissolved by pepsine. Common salt had a very important rôle in the animal kingdom. Salt was the only substance of our food which could be taken in a mineral form and for which we had an instinctive liking. He was inclined to think that those who were subject to heartburn should not indulge in an excessive quantity of salt.

When the food was placed in the stomach, and when the pepsine had been poured on it, digestion began. What became of the fat? It was not digested much in the stomach. There was a lower kind of stomach in which good processes of digestion were carried on. It was in this lower stomach that the digestion of the starchy matter took place. Therefore, if they bolted their food, they were in great danger of allowing food to go into the stomach which could not be digested. He would like to ring the changes upon that matter of thorough mastication, because he knew how many of the horrors of mankind were due to the want of proper mastication. Some people said it was only a gourmand who could stay long at the dining table. Nature meant us to eat, and there was nothing wrong in enjoying the pleasure of the table.

Our food could not be too varied. If we had varied food and took it in moderate quantities, did not attend the dinners of the Sanitary Institute—(laughter)—and chewed our food properly, we should not suffer much from indigestion. Pepsine had no effect upon the fats, and the true digestion of fats could not take place unless plenty of saliva was swallowed with it. In the duodenum, or lower stomach, they got a different state of things, and they had a material which emulsified the fats and enabled them to be passed into the blood. He had gone over in a very desultory manner so many points in connection with the subject of nutrition that he had only time to say a few words with regard to the fatty foods. Some people believed sugar was not a wholesome article of food even for the young, and children were often punished for surreptitiously making free with the sugar bowl.

That was a great mistake. Sugar was a food which nature intended for the young. Sugar was a natural and nutritious food of the young. As people grew older, however, their powers of converting starch into fat became somewhat diminished. The fatty foods which children instinctively loathed, older people naturally took to in a more mature time of life. It was a great mistake to torture children by making them eat fat when they did not like it. Nature had put into human beings instincts which, on the whole, were true. Therefore, when children longed for lollipops, and such inclinations were denied, he thought they were not true to their instincts. In later life people took to fats. This was because their vital powers were, to some extent, impaired, and they were not quite so able to organise starch and sugar into fat. He had the greatest faith in the value of fats. They were the most valuable of our foods. For a long time, physiologists were under the mistaken idea that the white-of-egg kind of foods, the albuminoids, were really the most valuable. But that opinion must no longer prevail, because really the most valuable portion of our foods (of course only a partial food) was the fats. They gave out a much larger amount of heat and of motive power than any other of our food materials did; and, whilst only a very small portion of our nitrogenous food was assimilated—in many cases not 20 per cent.—the fats were altogether assimilated.

They must remember what a large quantity of water there was contained in our albuminoid foods. In starchy food only 10 or 12 per cent. was water; in roots

perhaps up to 80 per cent.; in fats there was no water at all. When they came to albuminoids, such as lean beef—a steak, for instance—there might be 70 or 75 per cent. Water formed the larger portion of nitrogenous matter. Some of them might have seen the big Guardsmen mounted on horses at Whitehall, in London. They had big boots, which came considerably above their knees. If a guardsman like that were dried at a temperature of 212 degs., he would exactly fit into those boots, so great was the quantity of water contained in his body. There was very little water in the fats. All the water was contained in the flesh. Fatty food, therefore, was very useful; and he would enjoin upon all of them to use fatty foods whenever they could possibly do so, when their stomachs would tolerate that kind of food.

The beauty of woman depended largely upon the layer of fat lying beneath her skin. The roundness and beautiful curves which they admired so much were altogether due to fat. Therefore they should not be afraid of fat. Some people were afraid of getting too fat. No doubt fat, when it became too abundant, became a kind of disease. He heard that afternoon of a gentleman who was obliged to sit upon two chairs, he was so fat. (Laughter.) He heard of another gentleman who had to go downstairs backwards, because he was not able to go down in the ordinary way. (Laughter.) Of course, when people were so fat as that it was a discomfort. But a moderate amount of fat was a very good thing. And then, as we got on in life and lost our youth, nature beneficently assigned, especially to the fairer portion of creation, additional layers of fat.

The comeliness of middle and even old age, which, it seemed to him, distinguished especially the ladies of our country, and, to a great extent, compensated for the passing of youth—and he believed, himself, that the lady of forty was handsomer than the lady of twenty. (Hear, hear.) That comeliness was altogether due to the layer of fat, which gave softness to the complexion. Therefore, let them not be afraid of fat, and not take extraordinary means to get rid of it by using acids—acetic acids—or by starving themselves by any of the starving systems, which were thoroughly bad systems.

If they really wanted to get rid of superfluous fat, there was nothing like exercise in the open air. (Applause.) One of the great features of the present day was open-air exercise. Ladies were now taking to bicycles and all kinds of games, which necessitated a considerable amount of muscular exercise, and kept them out in the open air. He thought ladies were getting taller and more vigorous than ever they were; and, after some time, as they got more opportunities for this out-door exercise, they would be like the strange race of women described in Bulwer Lytton's "Coming Race"—they would dominate over the men, as they ought to do. (Laughter and cheers.)

Exercise, therefore, was the means to get rid of superfluous fat. The more they walked and took exercise the more perfect combustion took place, the more the arterial blood was kept pure, the more their complexion was kept bright and healthy. He would now show them how people looked when they took too much food and too little exercise. By the reflection of a light, the lecturer at this stage humorously pointed out that "the Lord Mayor had lost his rosy hue and the Sheriff had turned a greenish hue." (Laughter.)

He had now to conclude the lecture. He had endeavoured to travel over a considerable territory, and he feared he must have halted many times upon the way, but, if, in this rapid sketch, he had awakened in them any desire to study this subject for themselves, he should have been more than repaid for the very little trouble and the very great pleasure which he had experienced in connection with this lecture to the Congress of the Sanitary Institute. (Cheers.)



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## Food and Sanitation.

SATURDAY, OCTOBER 31ST, 1896.

### LONDON WATER: A BETTER LATE THAN NEVER REVELATION.

IF it had not been for the exposures we have for the past few years felt it necessary to make respecting the semi-filtered sewage and drainage which the London water companies sell as pure water, and Professor Crookes Dewar and a few others regularly eulogise, how long, we wonder, would the London County Council have been content to accept the periodical analyses made for the Company and the Government as satisfactory? We have over and over again published

refutations of their accuracy and demanded independent investigation. The County Council, having at last taken our advice, has found that our revelations *re* London's water are every one proved to the hilt. In addition to the London County Council's own chemists, Dr. Dupré, Dr. Klein, and Dr. Thomas Stevenson were engaged in the examination. These specialists state that the work of the water companies' filters are not efficient. Wet mud escapes the filtering process. Dr. Dupré has reported the presence of various matters and living organisms in the filtered supplies, thus proving that, although filtration is on the whole well done as regards coarser and more readily separated particles, it is not sufficiently perfect to exclude all living organisms, and consequently *there can be no guarantee that none of the pathogenic organisms, which occur undoubtedly at times in the rivers above the intakes, will find their way into the water supplied to the consumers.*

Dr. Klein has found a superabundance of microbes in certain samples, and he has demonstrated the copious presence of the bacillus coli, the normal inhabitant of faecal matter in filtered supplies, which can mean only one thing—namely, the imperfect filtration of sewage-polluted water. It is a curious satire upon the intelligence of editors of our London daily papers that a clear commonsense and publicly-useful opinion on this grave question has been expressed by only one paper, viz., the *Morning*. In its issue of Oct. 26 our contemporary says:—

"Consider that once a month the chemists of all the London water companies issue reports, which are confirmed by the official analyst of the Local Government Board, and remember how many Parliamentary inquiries there have been into the quality of the daily drink of the metropolis! And yet 'the copious presence of the bacillus coli' has escaped them all. Clearly some one ought to be hanged.

"Now, what does the Government mean to do? In the first place, what has the official analyst of the Local Government Board got to say to Dr. Dupré and Dr. Klein? He is a well-paid public servant, with a special responsibility in this matter. Upon this official *The Lancet* is right in saying that the County Council report is 'a serious reproach.' What is his answer? Then there are the analysts hired by the water companies to publish monthly reports as to the purity of the London water. What is their reply to the charge?

"This is a question that concerns the poor far more than the rich, or even the middling class. The comfortable classes all, or nearly all, have filters in their houses, which, if not always a certain preventative, anyway minimise the danger. But the masses do not have filters, and are thus drinking daily sewage-polluted water. Is it necessary to say more? We have had an Opium Commission; we have a Liquor Commission; it is high time we had a Drinking-Water Commission."

We also should like to know what the company and Government analysts have to say, seeing that for four years we have said and proved what Drs. Klein, Dupré, and Stevenson now substantiate. We suspect, however, that the persons thus plainly asked for explanations will lay low in the future as they have done in the past, and think that the safer policy. We like the way the *Morning* puts its views on the question of pure water, but it makes one very grave mistake. The average household filter does not minimise a danger; it is, on the contrary, a filthy, disease distributor, as the *Morning* writer would speedily learn were he to examine the experiments of Drs. Sims Woodhead and Cartwright Wood. The only filters which effectually prevent passage of disease germs into the filtrate are those made on the Pasteur principle. If we must drink London's present semi-filtered sewage and drainage, the Government ought to insist that it be efficiently filtered on the Pasteur principle.



## THE FARCICAL PURE BEER ENQUIRY.

THE proceedings of the Departmental Commission appointed by the Treasury to consider the question of Beer Materials, so far as they have gone, have just been made known in the daily press, from which we quote the following :—

“At the first day's inquiry, the Earl of Pembroke and Montgomery presiding, Mr. John Steele, Chief Inspector of Inland Revenue and Excise, was examined. He stated that his principal work was to advise the Board of Inland Revenue with regard to regulations in connection with the beer duty. Each brewer had to take out a yearly licence to brew, at a cost of one sovereign. In brewing 42lb. weight of malt or corn of any description, 28lb. of sugar was deemed the equivalents of a bushel of malt, and a brewer was expected to produce 18 gallons of beer, at a gravity of 55 degrees, from each bushel. The bushel might be grain or it might be sugar; 42lb. of the one, or 28lb. of the other, was fixed by law, so as to have the charge upon the worts instead of the materials. The dates upon which brewing operations took place were entered in a brewing book, and entries could not be altered. The operations were conducted under the inspection of Government officials, and samples of the produce were sent up to the Government laboratory, so that if anything illegal were done—he made use of that term because it was difficult to say what ‘adulteration’ was at the present time—it would there be discovered. It was rather difficult to define what materials could not be used, as far as the Inland Revenue was concerned. In the Beer Act they had a requirement to enter the materials that were used in the brewing book, and unless those materials were deleterious or noxious he did not see how the Inland Revenue officers could object to them. It was, therefore, difficult for them to say that the use of certain material was a practice of adulteration if the brewer obeyed the proper regulations in using it. Asked if it would be possible to use ingredients which had not been entered in the brewing book, witness said the brewer might, perhaps, run the gauntlet if he were a remote small brewer for a brewing or so, but he did not think that it could be done as a practice, under the present system of survey and check. The officer had cognisance of the sugars and other materials, grain or malt, that were in the stores. If the brewer surreptitiously used anything outside that he would commit a fraud. The officer had power to enter on the brewing premises at any time he liked, day or night, and if, say, during the night he were refused entrance he could break open the door, though only in the presence of a police officer. In case of doubt, samples of the materials used, of the grains and of the worts produced, were taken and sent by the officer to the Government laboratory for analysis. That was frequently done. Of course a very close check was kept over the Government officers themselves by supervisors, who were continually going in and out. For the year ending September 30, 1895, 55,389,093 bushels of malt and corn, and 2,274,148 cwts. of sugar were used in brewing. The beer duty (excluding licence duty) raised on that was £10,927,451. There were 8,874 brewers, who brewed for sale, and of these 4,893 were returned as having used malt and hops only. Twenty-seven were returned as using malt, hops, and raw grain only; 744 who used malt and hops, raw grain and sugar; 19 who used malt, hops, and sugar for priming only; 11 who used raw grain unmaltd; 496 who used maize; and 342 who used rice. There were 26 who used ‘other kinds of grain’—beans, grist, and sago. There were 8,843 brewers returned as not using hop substitutes, but hops having been so cheap during the past few years there was nothing to be gained by using substitutes. The proportion to malt of sugar used in England was higher than in Scotland or Ireland. There were 767 brewers returned as using saccharum, 16 who used

syrup glucose only, 72 who used syrup of saccharum, saccharum syrup. Glucose was sugar made from starch—chiefly sago starch. The brewer paid duty according to the gravity of his beer. Under the Act of 1888 the use of saccharine had been forbidden, that being a material which gave enormous sweetness without corresponding gravity. It was not forbidden because it was deleterious to health, although the use of such a substance would, of course, be forbidden.

“In reply to Professor Odling, witness said that the brewer had full liberty to use any kind of saccharine material—having the benefit of what was called the ‘free mash tun.’ No action would be taken against the use of hop substitutes that were not injurious to health. The Board would not interfere with the use of quassia, but it would with the use of *cocculus indicus*, because the latter was poisonous. It was used in beer many years ago. The materials used in brewing included malt, gelatinised rice, flaked rice, maize flour, torrifed malt, malt flour, Dutton's malt flour, Beane's patent grist, patent rice malt, gelatinised maize, desiccated rice, maizone, cerealine, rizine, patent flaked maize, rice shells, and Sheppherd's corn malt. Besides these ingredients there were black malt sugar, dextrinous caramel, glucosine caramel, caramelised dextro-maltose, viscosiline, liquorice, malto-dextrine, ground sago, and varieties of sugars, glucoses, and saccharums under fancy trade names.

“By Mr. Primrose: The Government officers had power to enter public-houses and take samples. There was no restriction as to the quantity of salt put into beer.

“On October 22, Dr. G. Harris, consulting chemist to the County Brewers' Society, said he knew of no brewing materials in use by brewers which he considered to be deleterious.

“The Chairman (Earl of Pembroke): Then you think that the materials in use by brewers introduce no ingredients into beer which are not introduced by barley malt?

“Witness.—That is apart from the question of hop-substitutes or anything of the sort, and dealing with malt entirely.

“The witness was asked whether it was a fact that a brewer had said, ‘He brewed himself, with slight variations for the time of the year, as follow:—80 per cent. of Essex barley, 10 per cent. of Smyrna, and 10 per cent. of sugar. If this Bill ever became law he should certainly be forced, in order to get enough material into the mash tun, to use 40 per cent. of foreign barley and 60 per cent. of English.’ He replied that he agreed with the general statement that if a brewer was compelled to discontinue the use of sugar he would have to increase the amount of foreign material that he used.

“The Chairman: You consider that brewers using large proportions of foreign barley malt are enabled to dispense with malt substitutes, or use only small amounts of them?—Witness: Yes.

“The Chairman: Have you been long enough at your present work to enable you to tell the committee when the alteration in the public taste in favour of lighter beers took place?—The Witness: I shouldn't like to put a definite date on it. I suppose it is a taste which has been gradually growing up, but I should put a well-marked step in that direction at about 15 years ago.

“The Chairman: The brewers found about that time that there was a demand for a lighter sort of beer, and consequently they commenced brewing that lighter sort; and in order to brew that lighter sort of beer is it necessary they should use less malt and more sugar?—The Witness: That is the general experience.

“Or less English malt and more foreign malt?—I regard those two things as being practically the same.

“To turn for a moment from the malt to the hops. I understand, as was admitted in the House of Commons, that during the last year or two the amount of hop substitutes that are used in brewing is very



small indeed—something like  $1\frac{1}{2}$  per cent., or something of that sort?—So far as my experience goes, and as to the knowledge I have of breweries, I know absolutely of no hop substitutes being used. My experience dates back for 14 years.

"I see that Mr. Griffith Boscawen, speaking in the House of Commons on behalf of the hop-growers, declares that the year 1882 was a very bad hop year, and hop-growers expected to obtain very high prices, but the prices of the hop substitutes were very much enhanced. He mentions three drugs. He says: 'Substitutes were used to a great extent in this year, and the prices of Colombo root greatly increased.' Did you know that Colombo root was used in the manufacture of beer?—No.

"Camomile rose from 40s. to 120s. Have you ever come across camomile?—No.

"And quassia rose 'from £5 to £40'; have you ever known quassia used?—No.

"Your experience has lain entirely amongst country breweries, has it?—Latterly amongst country breweries. Before that I was connected with one of the Burton breweries.

"You did not find any of those materials used there?—No. I have never known an instance in which hop substitutes were used.

"You don't exercise any sort of supervision at all?—Oh, yes, at certain breweries I exercise supervision, and make unexpected visits during the process of brewing; also I have the opportunity of finding out what materials are being used. Neither on the part of a consumer nor of a retailer have I ever had any complaints as to the quality of beer. The committee will know, of course, that there are many reasons for beer going bad, apart from the fact of its having been composed of inferior substances. Beers go bad usually from defects in the process of manufacture. I should define a defect of the kind in this way—I would say that the mashing process has not been conducted on lines suitable to the material—the malt—that the fermentations have not been conducted as they should be, either with suitable yeast or within a suitable range of temperature; that the plant and vessels of the brewery have not been kept as clean as they should be; in fact, that is one of the most frequent causes of beer going wrong.

"The witness, answering Dr. Bell, said the use of sugar did not necessarily tend to the production of a larger percentage of sugar in beer. In the first place, the amount of alcohol-producing matter in an average sugar was not very greatly in excess of that in a malt wort; and, secondly, when a brewer used sugar he purposely either dried the malt at a higher temperature or used a higher temperature in the mash tun, both of which had the effect of producing a wort of a different character, more highly dextrinous, although not so fermentable, than he would do in the ordinary way, so that the total amount of alcohol-producing matter in the wort would not be greater than in a wort made from all malt.

"On Thursday, the Committee heard Mr. Frank Wilson and Mr. John B. Kibble, both brewers. In reply to the Chairman, Mr. Wilson said what were called malt-substitutes were absolutely wholesome. There was not only a varying in the English barleys, but in the English barleys grown in different counties. For instance, this year the Eastern Counties had grown barleys that no country in the world could surpass; but up in the North a great deal, absolutely spoilt by rain, was unfit for malting. It was practically impossible to lay down any law under which a brewer should declare on his casks, or otherwise the materials of which his beer was made. The average beer used in this country in the public-house was less intoxicating than formerly, and it was more wholesome. Mr. Kibble stated that porter used to be the principal London drink, but it had come down from 70 per cent. in 1862, to about 30 per cent. at the present time; the consumption of light

ale having taken its place, and the old ale having died out."

The Committee was to meet on October 29, after which it intended to adjourn until after Christmas. If it is to hear more of the Inland Revenue and trade engineered rot it has already gathered as evidence it may just as well resume its sittings at the time of the Greek Kalends.

#### MEAT.

At Birmingham, on October 23, Thomas King, butcher, of Lodge-road, was summoned for having four pieces of beef, one breast of lamb, one beef's heart, half a breast of mutton, and half a shoulder of mutton exposed for sale which were unfit for food.—Inspector Wiltshire visited defendant's shop at 11.15 on Saturday morning, the 10th inst., and found the pieces of meat hanging in the shop. They were dry, in places green, and when cut into one or two of them contained maggots. Witness seized the meat and showed it to Dr. Alfred Hill, who condemned it. The meat had been sound meat, its condition being due to its being kept too long.—Mr. Cross, in defence, said that there was no intention to sell the meat, but it had been overlooked by defendant, who had had a great deal to look after that morning, owing to a manager having left him without notice. Defendant had borne a good character for twenty-one years, and there had been no previous complaint against him.—The Bench said that at least there had been gross carelessness, and they must fine the defendant £10 and costs, and they felt that it was sufficiently moderate considering that they could have fined him £120 if they had felt so disposed.

#### THE SAUSAGE SEASON.

In the High Court at Ramsey, on Oct. 20, Jowatt and Sons, of Liverpool, agents for Edmondson and Son, Wolverhampton, sausage makers, etc., sued Edward Quayle, grocer, Ramsey, for £2 18s. 9d., for sausages and other articles. The defendant had paid £1 13s. 11d., but refused to pay the balance, alleging that the sausages were green mouldy, and not as represented, good German. The plaintiff said he did not guarantee them to keep longer than seven days, but the defendant and his witness said that the plaintiff had guaranteed them to keep two months. The defendant had sent a portion of the goods back and thrown away the remainder. The suit was dismissed.

#### BUTTER A PERISHABLE ARTICLE.

At Tisbury Petty Sessions, on October 22, John White, grocer, of Tisbury and Wilton, was summoned by Frank Beardsley, district inspector of foods and drugs, for selling half a pound of butter which was adulterated with 5.16 per cent. of excess water.—Mr. Marsh (Yeovil) appeared to prosecute on behalf of the County Council, and Mr. Jackson defended.—Mr. Marsh remarked that the prosecution was instituted by the County Council for the purpose of preventing the sale to the public as butter a compound of butter and water. In the present case the article sold as butter contained no less than 26.4 per cent. of salt and water, the proportion being 21.6. It had been laid down by the analyst at Somerset House that 16 per cent. of water in salt butter was allowable, and all in excess of that percentage was placed there either wilfully for the purpose of increasing the weight or left there by negligence. There had been several prosecutions of this character locally and in other parts of the country, and the magistrates had convicted in cases where there had been 19 and 22 per cent. of water.—Mr. Beardsley proved that he went to Mr. White's shop at Tisbury on Sept. 3, and purchased from his manager there (Frank Cooper) half a pound



of salt butter, for which he paid 5½d. He told him he required it for the purposes of analysis, and divided it into the usual three proportions, one of which he retained himself, another he gave to Cooper, and the other he sent to the County Analyst, Mr. Gatehouse, of Bath, who in his certificate of analysis stated that the sample was made up as follows:—Water, 21·6; salt, 4·8; butter-fat and curds, 13·6; total, 100·0. The analyst added:—"I am of opinion that the same is a sample of butter which contains 5·6 per cent. of water in excess of that found in or necessary to ordinary commercial butter. The constitution of this butter was not altered by keeping so as to interfere with the analysis. Butter contains 8 per cent. to 16 per cent. of water, all in excess of this latter amount being regarded as added merely to increase the weight or bulk."—Mr. Jackson pointed out that the Act required that when the articles taken were perishable, as in the case of butter, the summons should be served within 28 days of the taking of the sample. In the present case the sample was taken on September 3, and the summons was not served until October 12. He, therefore, although prepared to go into the merits of the case, submitted that the Bench had no jurisdiction in the matter.—Mr. Marsh urged that salt butter was not what was regarded by the Act as a perishable article, and said that another Bench of magistrates decided that it was not.—After a lengthy consultation, the Bench said they had come to the conclusion that butter was a perishable article, and they had therefore decided to dismiss the case on the technical objection for the defence.—Mr. Jackson applied for costs, but the Bench declined to grant them.

#### STEARINE IN LARD.

At a meeting of Bolton grocers, Mr. Steele said he was glad to find that there was less adulteration than formerly, but there was one recommendation of the Special Committee which he objected to. It was that of allowing the admixture of beef-stearine with lard.—Mr. E. Eaton said it was necessary that stearine should be used for stiffening purposes.—Mr. Steele said he was prepared to propose a resolution opposing the recommendation.—Mr. Eaton asked what certain large lard firms (which he named) would think about such a resolution?—Mr. Steele did not care what they thought. Many people, he added, bought American lard, refined in England, in the opinion that it was home-rendered lard.—Mr. Eaton maintained that stearine was used only for the purposes of "setting" the lard, and could not be done without.—After some discussion Mr. Steele moved a resolution that the Bolton Grocers' Association oppose the recommendation of the Special Committee that stearine could be used as an admixture for lard.—The resolution will be discussed at the next meeting of the association.

#### HOW DISEASE IS SPREAD BY LAUNDRIES.

SOME recent investigations into the practices of several laundry owners of supposedly good standing and careful methods disclosed a disquieting state of things. Articles were found to have been sent out from laundries indiscriminately to women in small tenements where disease may, for aught the so-called laundry owner cares, be rife, and thus distributed to the houses of the unsuspecting patrons of the laundry. In a report just issued by Sir Chas. A. Cameron, Medical Officer of Health, Dublin, he states that "a woman introduced clothing from a dwelling in Creighton-street in which scarlet fever had broken out. This woman gave a false address—had she given the correct one she would not have been admitted to the premises, as the superintendent had the infected house on his list of infected dwellings as supplied to him regularly from the Public Health Office. The matron's servant occupied a 'stall' next to the one hired

by the woman in question. Both used the one 'wringer'—the result was that a Mrs. O'Brien's family were attacked by scarlet fever. Mr. O'Brien promptly reported the matter to me, and at my suggestion, that, as his dwelling was in the centre of a public institution visited by thousands of persons, he should, as each member of his family would be attacked, have the sufferer immediately conveyed to one of the fever hospitals, Mr. O'Brien readily assented.

"The fever attacked but three members of the family; the others escaped, being from home at the time. The Superintendent's dwelling was thoroughly disinfected, and the wearing apparel, bedding, etc., removed to the disinfecting chamber.

"With a view of taking further precautions against the introduction of infected clothing into the wash-house, I directed a return to be made out for me describing the occupation of the women frequenting the wash-house. It appeared that many of them were professional washerwomen, who were making a profit out of their operations in the wash-house."

#### DRUGS.

HENRY SYMONDS TUCKER, chemist, Great Hampton-row, was summoned at Birmingham, on Oct. 23, for selling tincture of iodine which contained 74 per cent. of iodine and 17 per cent. of iodine of potassium in excess of the quantities required by the British Pharmacopœia.—Dr. Alfred Hill said that the danger was that persons who were prescribed for got the drug much too strong.—Defendant said that the article was above its strength owing to the spirits having evaporated.—The Bench said that there was no intention to defraud, and they thought the case would be met by defendant paying costs, 6s.

#### MORE LEAD POISONING.

A CHESTERFIELD telegram states that a serious outbreak of lead poisoning has occurred at the Derbyshire village of Mosbro', between Chesterfield and Sheffield, and that already there are several cases of paralysis. The gathering ground for the water supply is at High Point, on the Derbyshire moors, and the water is supposed to eat into the pipes by reason of the presence of humic and other acids, which develop when water charged with decayed peat moss comes into contact with lead. Indignation meetings are being held to force the hands of the local authority, and samples of the water have been sent to the Local Government Board.

Dr. Mackintosh, medical officer of health for the Chesterfield Rural District Council, has ordered limestone to be placed at the inlets and outlets of the reservoir, and if this is not effectual, a solution of chalk is to be adopted, similar to that at Sheffield, Ridgeway, Killamarch, and other places.

Limestone, chalk, etc., at the inlets and outlets are but very sorry tinkering with a grave danger. The easiest and most effectual step is to prohibit the use of lead pipes for water carriage in these dangerous districts. At an indignation meeting, on Monday, Dr. Jones, medical officer to the Eckington Colliery Field Club, after referring to the rather hurried manner in which he had been called to the meeting, said he was not in a position to say as much as he should like to say. But he might say that since 12 months ago he had never been free from lead poisoning cases. The outbreak had lately assumed more serious proportions. That was owing to the recent rains, which had followed on a long dry time. Many men and women in the district were suffering intensely from lead poisoning. It was not for him to say where that lead came from. It was in the water, and it wants remedying. But how were they going to get that remedy? An application would have to be made to their authority.



It should be a very strong representation. He would not advise them to rush into any headstrong action. The number of cases was very large indeed; he would not pledge himself as to the number, but from his own official knowledge he could tell them that there had been 12 certificates granted for Mosbro' alone, apart from Halfway House. Those were all lead colic cases pure and simple, and were club cases in every instance. He was not in a position to say how many cases were being treated privately. He would endeavour to ascertain. The outbreak was certainly of a very serious type, and not only caused a great deal of present pain, but also had serious after effects. Paralysis frequently followed lead poisoning. They had not yet got to that state at Mosbro', but they had several cases of "dropped wrist." Recovery from that was not easy; and in the case of colliers of course altogether incapacitated them from work. He was aware that many of the medical men had a large number of cases. He would suggest that they should make application to the local authorities to deal promptly with the matter. It had been dealt with in other places. Sheffield had had the same trouble to contend with; but the matter had been dealt with, and they had no lead colic at Sheffield today. (Hear, hear.) Personally, he could not see why the Eckington water difficulty could not be successfully dealt with. He was not competent as a water engineer to speak on the matter; but he knew there were means that could be adopted for grappling with the difficulty, and he felt that those means should be used by those in authority, whoever they might be.

#### CHARGE OF ADULTERATION AGAINST A CHEMIST.

MAGISTRATES AND INSPECTOR AT VARIANCE.

BEFORE the Heanor Petty Sessions Bench on Oct. 26—Messrs. Sitwell, W. Smith, T. Mayfield, and J. K. Fletcher—a summons was heard, taken out by Captain Sandys (Inspector of Food and Drugs), against David Osborne Simpson, chemist and druggist, Derby-road, Heanor, for selling  $\frac{1}{2}$  lb. of precipitate of sulphur to Joseph Hewitt, the County Inspector, at Heanor, on 18th of August last, which contained 46 per cent. of sulphate of lime.—Mr. Simpson defended his own case, and stated that he sold the article with the perfect knowledge that it was not pure. He informed prosecutor that they kept two kinds of this article, and the one sold to the inspector was the one demanded by the public, when he understood the purpose for which the article was required. He had sealed his own doom, because when the inspector was served he was very ill, and unfortunately neglected to label it according to custom. He had sold the same article for nearly 50 years, and had never had a complaint before. He produced the Pharmacopæia, from which he took his stand.—Joseph Hewitt stated he purchased the sulphur at defendant's shop, and denied being told by defendant that the article was not pure, or that he would exchange it.—J. White, public analyst, Derby, spoke to receiving the sample of sulphur marked 378, and found that it was not pure, and explained at some length the process through which the articles went, and stated that the Pharmacopæia produced was an old one, and that the law had changed.—Some lengthy explanations on both sides having been made, Mr. Simpson remarked that the new law alleged to have come into operation was fresh news to him, and the Bench were in a majority for dismissing the case.—Mr. Sandys desired the Bench to point out the failure in the evidence, and want of point of law.—The Bench remarked they had dismissed the case because they saw it was a simple mistake on the part of defendant.—Mr. Sandys appealed to the magistrates' clerk, but Mr. Huish remarked he could not cross-examine his Bench, and the Captain left the court with the intention of appealing to the Quarter Sessions against the decision of the Bench.

#### ATTEMPTING TO GAG A MEDICAL OFFICER.

IN a recent report to the Kensington Vestry, Dr. Orme Dudfield directed attention to the fact that in one part of Kensington, "Notting Dale," there is the terrible death-rate of 45·2 per 1,000, whereupon a member of the Vestry, a Mr. Hugget, thus attacked the Medical Officer:—"He did not quite know," says the *Kensington News*, "whether Dr. Dudfield was an officer or not. (Oh, oh.) At any rate he (the speaker) thought the medical officer had acted unwisely in publishing his report. He would not move a resolution, as that would look as though the Vestry discredited their medical officer. But in his opinion, the report ought never to have been printed. The medical officer could do what he liked in his annual report; he might throw as much mud at the Vestry as he pleased, but this report ought to have been before the Committee." Apparently some 29 members also thought this damning revelation ought to have been kept to the Committee, and not allowed to appear in print; but 38 members held a different view, all honour to them, for believing that it is a crime against civilisation, and making for righteousness that such truths as the one that any part of London can show a death-rate of 45·2 per 1,000 should be kept secret. A remedy is wanted and publicity can give it.

#### ST. LUKE'S VESTRY AND ADULTERATION.

THE Public Health Committee have recommended that in future the Solicitor attend in all cases of prosecution taken under the Sanitary and Adulteration Acts.

Mr. W. Howes, in moving the adoption of the report of the committee, said that he believed there was a great deal of adulteration going on in the parish. Of late the defendants had been represented by counsel, and technical objections had been raised. They, therefore, thought it only right that their sanitary inspectors should have legal assistance, as when they took up a prosecution they took it up with the idea of winning. For this reason they recommended that in future their solicitor should appear in all these cases. Some legal quibbles had been recently raised at the Clerkenwell Police-court, and all their summonses were adjourned for professional assistance when the cases again came before the court.

The report was adopted.

#### ANALYSTS' CERTIFICATES—MR. RICKETTS SCORES AGAIN.

ON October 21, prosecutions, before Mr. Denman, by the Westminster Vestry for selling milk alleged to be skimmed or adulterated with added water were met by Mr. Ricketts, solicitor for defendants, with objections to the form of the certificates furnished by the Vestry's analyst. In one instance, there was an omission to record the fact whether any change had taken place in the constitution of the article which might interfere with the analysis. In another case Mr. Ricketts took the more novel objection that the analyst did not set out the exact quantity of water which was contained in the milk. The analyst dealt with the solids, but thought the water beneath notice. (Laughter.)—Mr. Percy Gates, solicitor for the Vestry, argued that as the certificate in the customary form showed 15 per cent. of "added water," it was sufficient for all purposes. It was quite an innovation to ask for more particulars.—Mr. Ricketts quoted from recently-decided cases in the Court of Queen's Bench to show that there had been expressions of opinion by the judges—particularly by Mr. Justice Hawkins—that the Legislature meant that certificates must state such facts as would enable magistrates themselves to come to the conclusion whether an article of food had or had not been adulterated. Analysts, Mr. Ricketts proceeded to



point out, did not among themselves agree as to the normal quantity of water in pure milk, and when there was such a great variation between the different standards it was of the highest importance that a complete quantitative analysis of solids and liquids should be given on the certificate.—Mr. Denman said he was certainly of opinion that the analysts were not the persons to draw conclusions—they should state facts. He agreed with all the objections taken by Mr. Ricketts, and dismissed the vestry's summonses.—Mr. Ricketts remarked that to the cases there would have been good defences on the merits—in one case a warranty.

#### HERTFORDSHIRE COUNTY ANALYST'S REPORT.

THE quarterly report of Mr. A. E. Ekins, the analyst appointed for the County of Hertford, for the quarter ended September 30, 1896, says that during the quarter 40 samples of food were submitted for analysis. They consisted of 19 samples of milk, 17 of butter, 3 of lard, and 1 of coffee. Two of the milks were adulterated, one by the addition of 9 per cent. of water, and the other was deficient in fat to the extent of 27 per cent.; three of the butters were adulterated by the addition of 70, 80, and 90 per cent. respectively of margarine. There is nothing that especially calls for mention, except that the percentage of adulteration is slightly above that for the rest of England.

#### ISLE OF WIGHT COUNTY COUNCIL AND ANALYSES OF FOOD.

THE Public Analyst appointed by the Council (Mr. Otto Hehner) reported that during the quarter 25 samples were submitted to him for analysis, these being—bread, 9 samples; vinegar, 8; plum jam, 8. The whole of the samples were "of the nature, substance, and quality demanded by the purchaser." The report continued: "Adulteration of bread has become an exceedingly rare occurrence since the prices of wheat and of flour have become low. Alum, which was formerly extensively employed to enable the baker to obtain from bad and dark-coloured flour a white-looking loaf, is no longer used. It is gratifying to be able to state that 'the staff of life,' as now supplied, is above suspicion, and generally of an excellent quality. Concerning the samples of vinegar, I have to point out that any fermented fluid which has become acid can lay claim to the name of vinegar, whether it be made from malt, spirit, sugar, or wine; the eight samples submitted to me had thus been derived from fermented fluids. It would, in my humble opinion, have been better if the inspectors had asked for any particular kind of vinegar (as, for instance, malt vinegar) in order to ascertain whether the vendors really give the article for which they are asked; and when asked for 'vinegar' only, they may legally supply any acid fluid which complies with the above definition. The samples of plum jam were all made of plums and sugar; several of them were artificially coloured by the addition of a small amount of harmless dye, but I did not feel called upon to report against this practice, which does not appear to me to be a desirable one, because Legislature has, in one important instance, at least—namely, in that of butter—expressly sanctioned the use of colouring matter (Margarine Act), and this being so, it appears to me to be futile to object to the colouring of other food materials."

#### BILKED BALACLAVA HEROES.

FIFTY-SIX of the 72 survivors of Balaclava were entertained to dinner on October 26 at the Olde Royal Hotel, Birmingham. A prominent feature of the gathering was the head, in a glass case, of Ronald, the famous charger upon which Lord Cardigan was mounted in

that famous ride. Lord Wolseley, the Duke of Devonshire, Mr. Sydney Low, and the rest of the friends of our heroes who advertised themselves over the Balaclava Fund, which they have not administered to the Balaclava survivors, as the public trusted to their honour would be done, were not present. Had they been face to face with the Bilked Balaclava Heroes, they would have heard some straight and very needed truths anent their conduct. Several of the poor fellows have been for years living on charity, cooped in work-houses, or begging their bread. Every appeal made to the Balaclava Fund Committee to apportion the money the public, in a burst of enthusiasm, subscribed some years ago for their relief, has been ignored by Lord Wolseley and his fellow notoriety-on-the-cheap gentlemen who had this fund to administer. Whilst Balaclava heroes are thus done out of their own, and begging their bread from door-to-door, the money this committee ought to have distributed to Balaclava survivors is keeping a gang of lazy parasites who live well on the Patriotic Fund. No wonder Lord Wolseley and the rest of the Balaclava committee carefully avoided the Birmingham meeting of the Bilked Balaclava Heroes.

#### PORT SANITARY REGULATIONS.

THE Tyne Port Sanitary Authority met recently in the Town Hall, Newcastle, Alderman John Forster Spence presiding. A circular had been sent to each member by Mr. R. Sheriton Holmes, the clerk, pointing out what changes would be necessary in consequence of the passing of the Public Health Act, 1896. Before considering the question of making regulations which the Local Government Board had the power to make under the Act, the Clerk pointed out that the authority had previously urged that these regulations should not be limited to plague, yellow fever, and cholera. After alluding to other suggested courses of action, he said: "A third course which has been suggested is that a form of certificate that there is no disease on board should be supplied to all pilots boarding vessels, that this form should be delivered to the captain and filled up by him under a penalty and re-delivered either to officers of the authority or the Customs, as the case may be, and that vessels entering the river having any case of disease, or suspected disease, on board should hoist a flag as a signal, so that the medical officer may be communicated with and the ship boarded. It would appear that such a regulation might be made under the Act and enforced under a penalty of £100. The essential features of any scheme would appear to be—(1.) No detention of vessels unless there is reason to suspect disease on board. (2.) As short a detention as possible of vessels having disease on board. (3.) The avoiding of the very serious cost of continuous medical inspection."—Resolutions were adopted, as prepared by the Clerk, and it was agreed that a deputation, consisting of the chairman and the Clerk, should proceed as soon as possible to London in order to have an interview with the Local Government Board on the subject.

#### HOW TO MAKE HIGH-PRICED MINERAL WATERS.

CRYSTALLINE CARLSBAD SALTS.—Sulphate of potassium, 2; chloride of sodium, 18; sodium carbonate crystals, 61; sulphate of sodium crystals, 88; distilled water, 50 parts. Dissolve the sulphate of potash and the chloride of sodium in the water and add this solution to the other two salts, previously melted in their water of crystallisation. Evaporate to 180 parts, cool, and stir to prevent the formation of large crystals, without, however, allowing them to be reduced to powder. Dry in the air, moistening occasionally with a little of the mother liquor. By dissolving 8 grams of this crystalline salt in a litre of water, artificial Carlsbad Sprudel water is obtained.



## LADIES' MEN IN CLOVER.

"A GREEK merchant, long resident in Abyssinia, gives an account of the treatment of the Italian prisoners. Some, he says, are treated like princes and others little better than dogs, and he explains this difference. The wealthy women insisted that their husbands should take into their houses prisoners who could gratify their personal vanity, so that hair-cutters, perfume-makers, etc., are very well treated. Queen Taitou herself set an example, and officers and soldiers capable of using a pencil have a capital time of it at the palace, being employed in painting the walls. A photographer is, moreover, in great request amongst the Court ladies."

So says the *Star*, but the paragraph is all nonsense. The humane Abyssinian's method of treating his prisoners like princes consists of cutting off the genitals of every Italian prisoner, and of depriving each black prisoner of a hand and foot. They were then left to their fate. Italian surgeons who found the victims of these hellish mutilations tell a very different story to that of the Greek merchant. It is not so pretty a yarn, but it is true.

## SALE OF FOOD AND DRUGS ACT IN LEEDS.

REPORT on analyses made for the City of Leeds during the quarter ending September 30, 1896, by Mr. Thomas Fairley, City Analyst:—The samples received have been—Milk, 49; skim milk, 1; butter, 5; margarine, 1; tea, 1; tinned peas, 1; cream of tartar, 3; total, 61. Two of the samples of milk were adulterated with 15 and 11 per cent. of water respectively, as compared with the lowest quality of natural milk, and no less than 15 were reported as of low quality. The skim milk was adulterated with 23 per cent. of water. As I have pointed out in previous reports, there is little doubt that the milks of low quality are adulterated with from 10 to 15 per cent. of water, but owing to the low standard adopted at Somerset House they have to be passed, to the serious loss of the public and the honest milk dealer. In cases where poor milk is supplied, the inspector should have power to follow it to its source, and to take samples for analysis directly from the cows alleged to have supplied the milk. By comparison of the analyses the addition of even a very small percentage of water can be proved. In the few and exceptional cases where cows do supply poor milk it may be found that the cows are unhealthy, or badly fed, or unprofitable as dairy cattle, and it is to the interest of the farmer to ascertain these facts. It is also evident that milk from unhealthy cows should not be used as food. In certain States of America a standard of average milk is adopted, and milks for sale are required to come up to this average. The cases of repeated fines of the same persons in different parts of the country for watering milk show that, even after paying fines, watering may be carried on at a profit. If the fines were made to cover one month's estimated watering profits it might then cease to be profitable. Two of the butters consisted wholly of foreign fat. The peas were adulterated with copper, equal to one-fifth of a grain of copper sulphate per lb. The other samples were genuine.

## THE SANITARY INSPECTORS' ASSOCIATION.

THE first meeting of the new session (1896-7) of this association took place on Saturday at Carpenters' Hall, London-wall, a large number of members being in attendance, with the chairman of council, Mr. Henry Thomas (Bermondsey Board). The annual report presented by the chairman referred to the most important portions of the year's proceedings, among the questions of greatest interest being that of the Bill in Parliament which the association is promoting for a scheme of voluntary superannuation of sanitary inspectors. In

order to anticipate objections which might be expected to be made in the House of Commons on account of the precarious nature of the present terms of office of many inspectors, a clause had been added to cover that objection, and it was believed from the many promises of support which had been received from members of Parliament that the passage of the Bill was now virtually assured. A remarkable increase in the membership during the year was announced. The result of the election of officers was declared by the scrutineers, and Mr. Henry Thomas, the retiring chairman of council, introduced his successor, Mr. W. W. West, of Walthamstow.

## A DRUGGIST-DOCTOR WHO CAN NEITHER WRITE NOR READ.

A PRETTY state of affairs was brought to light in Bay City, Mich., the other day. It seems that there has flourished there for some years a practising physician by the name of O. Barber, who is also a retail druggist. Recently, Dr. Barber had a case of diphtheria which he failed to report. For this oversight he was overhauled by the Health Board and the matter brought into court. To the amusement of that body and probably to the horror of his patients—he gave testimony to the fact that he could neither read nor write. In some mysterious, miraculous way, he has been able to make a great big "bluff" all these years. He is a Canadian by birth, and simply came over to the States and called himself "Dr." Barber. He was running a drug store when the Michigan State Board came into existence, and it granted him a certificate as registered pharmacist without an examination—as it did everybody else who happened to be in a drug store at the time. From year to year his certificate has been renewed, and "no questions axed," until last year, when he forgot or neglected to send his dues, and so did not receive one. The Board was, of course, perfectly innocent as well as ignorant in the matter. Since he failed to renew himself, he has had a registered pharmacist for clerk, but before that time he did all his own work. How he ever managed it no one knows, but it is presumed that most of his business consists in putting up his own medicines, and that whenever other prescriptions came in to be filled that he was "just out of some of the ingredients, and couldn't fill them." But there is perhaps a similarity between him and the old man whose wife said he "couldn't read a word of English, but he could read all the Latin of the blessed prayers." The prescriptions coming in writing in Latin may have been easy reading for him, even if his English reading and writing had been neglected. The exposure of this man has precipitated a war in Bay City against quacks and quackery, and the result will probably be very wholesome.—*Pharm. Era*.

## SANITAS IN NEW ZEALAND.

TOWARDS the end of last year the English Sanitas Company, Limited, brought an action in New Zealand against one Ogle for infringing their trade mark by using the word "Sanitas" in connection with sand soap, and were defeated on the grounds that there was no evidence or appearance of any intention at fraud; nothing to lead people to believe that they were purchasing Sanitas toilet soap. The plaintiffs then appealed and were again defeated on the same grounds. Not satisfied, they tried to move the court for permission to go to the Privy Council in London, and the New Zealand court has unanimously refused them leave to do so, and given heavy costs against them. All the plaintiffs' efforts having failed in Maoriland, they have now decided on going direct to the Privy Council on petition. If this be New Zealand's idea of justice it will soon earn an ugly reputation.



## THE PRESERVATION OF PERISHABLE FARM PRODUCE.

BY ALFRED SMETHAM, F.I.C., F.C.S.

Writing in 1851, Baron Liebig, perhaps the most noted chemist, and certainly one of the most astute observers of the century, denied in unqualified terms, and with what, at the time, appeared to be convincing arguments, that the putrefaction of organic substances was in any way due to fungoid or any other similar growths. To-day, less than half-a-century afterwards, not merely the scientific world, but the rank and file of a newspaper-educated public, talk glibly of microbes and bacilli, and refer all diseases from small-pox down to the corrosion of steel rails to the baneful influence of the ubiquitous microbe.

Between these two extremes there is a wide distance, but the truth lies much nearer the popular belief of to-day than to the educated opinion of forty years ago.

The rapid strides which have been made in our knowledge of the changes observed during the processes known as putrefaction, fermentation, etc., have been phenomenal, and he would, indeed, be a bold man who would dare to predict what will be the final issue, or practical worth, of these most important series of investigations which have now so completely dominated the minds of men.

But although our knowledge of these infinitely minute forms of life, which play such an important part in all the changes which we see around us, is practically limited to the researches of the last twenty-five years or so, it is not only considerable in accumulated facts, but it has a completeness which enables us to theorise with a certainty hitherto impossible.

Partly in consequence of the statements of Liebig, above referred to, Pasteur, the great French chemist, started a series of investigations on fermentation, which, for completeness and conclusiveness, rival any similar researches ever undertaken, and as the result of these and other inquiries conducted subsequently by him, and by others in every part of the globe, it has been conclusively shown that not only alcoholic fermentation, but almost all the changes to which organic substances and liquids are liable, are due to minute forms of life—micro-organisms, microbes, bacilli, bacteria, micro-cocci, yeasts, etc., as they are variously called. It has further been shown that each particular species of organism can only develop in any particular liquid, when sown purposely or accidentally in that liquid, and when also the chemical constituents present are suited for food for that particular organism. Hence, although there are many hundreds of micro-organisms already isolated and described, and although there are probably a still greater number unidentified, it is seldom that a great number of varieties are found growing actively at one time in the same liquid or substance.

But, notwithstanding this limitation, there are certain conditions essential to the growth of all micro-organisms, and, for the better understanding of our subject, it will be well to sketch briefly the functions common to all these low forms of life, and the conditions which govern their reproduction.

Micro-organisms, as the name implies, belong to the infinitely little, and it was chiefly on account of their exceeding minuteness that their importance in nature was for so long overlooked. The various forms of bacilli differ in size, but even the largest of them are individually invisible to the naked eye, and can only be distinguished by the aid of the most powerful microscopes, and then only satisfactorily after staining with a dye to render them more distinct. When sown in a suitable medium, these micro-organisms multiply with amazing rapidity, usually by processes of sub-division. Sometimes, however, spores are formed,

and as these spores perform functions peculiarly their own, and as these spores render their destruction more difficult, it is necessary to take note of this form of propagation, as well as the more common process of sub-division.

But, although under favourable circumstances the reproduction of these organisms is so astoundingly rapid, each and every form must have the conditions peculiarly suitable for its growth to develop freely. These conditions are usually (1), a proper supply of water, (2), a suitable temperature (generally between 60° and 100° F.), (3), a sufficient supply of those chemical substances on which the particular organism can feed; (4), the presence or absence of oxygen or air. Each of these four conditions is important, and must be kept clearly in mind in devising any rational system for the preservation of perishable articles.

Before proceeding further, it will be necessary to point out that not only do micro-organisms reproduce themselves under suitable conditions at a rate well-nigh passing comprehension, but that in the air, in water, in the soil, almost everywhere, these minute forms are to be found in numbers so great, and in varieties so diverse, that a momentary exposure of a liquid or substance to ordinary air may be quite sufficient to impregnate it with the germs necessary for any given series of fermentations. Under the conditions in which farm produce is stored and handled, it may safely be asserted that in every case there is ample opportunity for the introduction of many forms of organisms, and that, as a matter of fact, the spores of moulds and bacteria of various kinds are found in or on such substances in quantities more than sufficient to start decomposition when the conditions become favourable.

That being so, it is obvious that, in considering our subject, we are more concerned with the conditions necessary to retard the growth, or to completely destroy the micro-organisms, than with any attempts to ensure their absence during the period of collection and keeping previous to marketing.

Having now endeavoured to define, in general terms, the causes to which mouldiness, putrefaction, and fermentation are due, it becomes necessary to consider in greater detail what is meant by perishable produce. Strictly speaking, all that a farmer produces is capable, under unfavourable conditions, of being spoilt, and might, therefore, be considered perishable, but as the methods of harvesting and storing such crops as wheat, hay, potatoes, swedes, etc., are so well understood and practised with such perfection—certainly by the farmers of Lancashire—little need be said about them. If the wheat, or cereal crop is ripe, and the hay properly made, there is no difficulty in keeping them in proper condition until they have to be used or sold. Potatoes, root crops, apples, etc., which contain large quantities of water, present rather more difficulty. When got in a sound condition, the outer skins of these prevent the introduction of moulds and putrefactive organisms into the more fleshy interiors, and, if stored in a dry condition, they will keep, as a rule, sufficiently long for home use, or to enable them to be profitably marketed. If, however, frost be allowed to get to them, by which means the tissues are destroyed by the expansion of the water during freezing, or if they are bruised, or the exteriors otherwise damaged, an entrance is found for the micro-organisms, and mouldiness or rotteness, to a greater or less extent, will result. Doubtless, if roots and potatoes could be stored in properly constructed chambers, in which the temperature could be regulated, and kept a little above the freezing point, a distinct advantage would be gained, but the cost of the necessary plant, and the comparatively small increase in the value of the produce, would scarcely, I think, justify the outlay.

(To be continued.)



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## Food and Sanitation.

SATURDAY, NOVEMBER 7TH, 1896.

### "SHRIEKING NONSENSE" ABOUT AMERICAN OILS.

ON Monday last, a fire, caused by a mineral oil lamp explosion, broke out at 8, Clarence-street, Bethnal Green. Eliza Hollington and Maria McQueen, both aged women, received severe burns, for which they had to be treated at the London Hospital. Mrs. Hollington died shortly after her admission to the institution, and Mrs. McQueen is in a critical state.

The following cases have recently occurred:—

Mrs. Maria Vaughan, 62 years of age, sub-postmistress at Greenfield, Holywell, had during the past week or two been alone in the house, her servant sleeping out. Early in the morning smoke was seen issuing from the premises, and a man named Miles, a lodger in the next house, together with

Police-constable Williams, endeavoured to arouse Mrs. Vaughan. They were unable to obtain any response. Miles thereupon got into the house through the kitchen window at the back. On proceeding to the sitting-room he found Mrs. Vaughan in a sitting posture in a chair by the table, quite dead, she having evidently been burned to death. *All her clothing had been burnt from her body, which was also terribly charred.* On the table were various papers, stamps, money-orders, &c., which suggested that deceased had been engaged in making up her accounts overnight. A look over the room showed that a small lamp which was hanging on the wall just above where deceased was sitting had burst, and no doubt the burning oil had fallen upon her and set her clothing alight. It is considered probable that she was asleep at the time.—A fire occurred recently on the British tramp steamer *Cyrus*, 3,368 tons, of West Hartlepool, just after leaving Liverpool. While a barrel of paraffin oil was being lowered into the hold by the dock men the barrel burst, and the oil escaped and presently became ignited. The entire crew rushed to the hatchway to render assistance to the men below. The pumps were manned, and a stream of water was directed into the hold, while several tugs came to give what help they could in extinguishing the fire. Presently the flames died out, and it was then found that four of the crew had been fatally burnt. The men were carried from the hold, but died before they could be brought to the deck. While the work of removing the men was going on the flames broke out again more fiercely than ever. One sailor was left below, whom his companions were unable to rescue. The *Cyrus* meanwhile was anchored, and the fire was eventually put out. The sailor was found dead, and the body of a stowaway was discovered burnt to a cinder.

England has some queer newspapers, but amongst the worst it would be thought impossible to find one so lost to shame as to publish a defence of the American Oil Gang like the following:—

"Take, for example, the arguments addressed in a letter to the editor of the *Chemical Trade Journal*, a copy of which we have received in circular form, entitled, 'An American View of the Petroleum Question.' That we should allow our market 'to be made the dumping-ground for refuse' is something this correspondent says that he utterly fails to comprehend. So should we if this were true, but there is such a thing as a Petroleum Act to regulate the sale and storage of oil in this country. . . . However, in spite of this communication, we feel well assured that a commercial commodity, which is as 'explosive in a hot room or on a hot day as dynamite,' is not indiscriminately distributed for consumption amongst us, with the dire possibilities that would attend such criminal neglect on the part of our authorities. We can only describe such statements as 'shrieking nonsense.'"

In the opinion apparently of the journal which affronts science and truth by these assertions, the roasting alive of Mrs. Hollington, of Mrs. Maria Vaughan, and the five sailors of the steamer *Cyrus* is only "shrieking nonsense." There were some who thought we were more severe upon the *Lancet* and its wretched analysis a year ago than was merited. The shameful support, we quote above, of the American Oil Gang, of convicted contrivers of murder and arson, appears in the *Lancet* of October 31. To show how rotten is the *Lancet's* defence of this gang and their schemes, we quote from the *American Paint, Oil, and Drug Review*, of October 7, the following:—

"Charles Jenkins, president of the Crude Oil and Tanking Company, says: 'One great advantage that accrues to the people of Canada under our system of collecting taxes on oil lies in the fact that we have a uniform system of inspection. While in the United States every State has its own fire test, which may or may not be efficient, we in Canada have a fire test uniform in its application from the Atlantic to the Pacific, and in every case made by competent Government officials. Thus the safety of the public is looked after, and explosions from low grade oil are unknown here, though plentiful elsewhere. Even in Great Britain they are away behind us in this respect.'"

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American writers, relates how the independent refiners appealed to the United States Inter-State Commerce Commission in 1888. They stated that they, "*like all in the trade, could not live without access to the European market.*" OUT OF EVERY HUNDRED BARRELS OF VARIOUS KINDS OF PRODUCTS FROM THE DISTILLATION OF PETROLEUM FORTY ARE OF AN ILLUMINATING OIL NOT GOOD ENOUGH TO BE BURNED IN AMERICA. IT MUST BE SOLD IN EUROPE OR NOT SOLD AT ALL, AND A MANUFACTURER WHO CANNOT GET RID OF 40 PER CENT. OF HIS PRODUCT MUST GIVE UP MANUFACTURING." What does this statement of the American refiners themselves prove? Not even the *Lancet* can deny that it proves to the hilt that England is the "dumping ground for refuse American oil, not allowed to be sold in America," nor can the *Lancet* wriggle out of the fact that we thus convict it of dangerous ignorance, or deliberate lying, for we do not suppose that even its colossal conceit will afford it temerity sufficient to claim to know more of the oil refiners' business and methods than the refiners themselves do. But there may be reasons, outside science or truth, why the *Lancet* and its *Lamp Commission* humbug is devoted to the interests of the American Oil Gang.

For the right education of the *Lancet* and its deluded readers on this question, it is necessary further to point out that both Col. Sir V. Majendie and Sir Courtenay Boyle lately condemned the absence of control over the bulk of the petroleum, paraffin, etc., imported and used. As a better-informed journal than the *Lancet*, viz., the *Pharmaceutical Journal*, states: "The only liquid to which the present Petroleum Acts apply is that which, flashes below 73° F. (Abel test)—i.e., liquid which properly speaking, is not petroleum at all. Even so far as regards the very limited amount of oil or spirit under control, the regulation is extremely defective. True there are certain safeguards prescribed, but there is no obligation on local authorities to enforce them, nor has the Home Office any power to administer the Act or cause it to be administered. The present law, in fact, to use the language of H.M. Chief Inspector of Explosives, 'does not provide or nearly provide for the public safety.'"

The worst thing about ignorant and dangerous misstatements like these we quote from the *Lancet* is that although the journal has long ceased to occupy the leading position amongst medical journals, and has a steadily declining influence, there are many who yet think it voices the opinions of the medical profession. Happily for the protection of the public from such infamies as these of the American Oil Gang it does not. It cannot claim to speak for the medical profession, and the wider this truth be known the more powerless for evil will be some of its wretched opinions.

## THE PUBLIC AWAIT THE REPLY OF PROFESSORS DEWAR, CROOKES, AND FRANKLAND.

THE Water Committee of the London County Council have decided to spend £260 on three further examinations of water during half a year, and are of opinion that the examination of the water by the micro-filter method devised by Mr. Dibdin, the Council's chemist, last year, should be continued. The London Water Companies' experts report that there are no suspended matters in the London filtered water, and the official analyst, Dr. Frankland, does not refer to them in any way; while, on the other hand, the chemists who have made investigations for the Council have definitely supported the results obtained by the Council's chemist, in which he has been able to show that suspended matters are present in greater or less quantities, and that they are capable of being collected, weighed and analysed when a sufficient quantity of water is taken; but, by the exceedingly delicate method of micro-filtration devised by the chemist, the relative quantities and qualities are clearly differentiated, even in small volumes of water. The chemist submitted to the committee estimates of the cost of examining the water supply of each company. For examining the water three times weekly, making twenty-four samples a week, the cost would be £10 a week, and for a daily examination, making forty-eight samples a week, £14 10s. The chemist advised that the examination, although not chemically complete, would afford reliable data for indicating the variation in the efficiency of the filtration, and would be of extreme value in view of future inquiries. They recommended "that the chemist be instructed to make three examinations weekly of the water supply of each company, for a period of six months, at a cost of £10 a week, or £260 in all."

## THE COURT OF APPEAL DECLARES BEESWAX NOT A DRUG WHEN SOLD BY A GROCER.

In the High Court of Justice, Queen's Bench Division, on November 2, before Mr. Justice Grantham and Mr. Justice Wright, the case of *Fowle v. Fowle* was heard. This was a case stated by Justices of Kent, sitting at Cranbrook, who dismissed an information of the appellant, Thomas Fowle, against the respondent, Thomas Albut Fowle, for that he, on February 7, at Marden, did unlawfully sell, to the prejudice of the purchaser, a certain article called or known as beeswax, which was not of the nature, substance, and quality of the article demanded, containing about 50 parts beeswax and 50 parts foreign matter—to wit, paraffin. The facts were these. The appellant's agent went to the shop of the respondent, a grocer, and asked for a quarter of a pound of beeswax, and the respondent supplied him with the quarter of a pound of beeswax, stating that he could not guarantee that it was pure. The appellant's agent replied, "But you sell it as beeswax?" and the respondent said, "Yes." There was no label on the beeswax. The public analyst certified that the beeswax was, in his opinion, adulterated beeswax, or that the sample contained 50 parts beeswax and 50 parts paraffin. By the Sale of Food and Drugs Act, 1875, the term "drug" includes medicine for internal and external use. The justices found (1) that prepared beeswax known as "yellow wax" (with the bleached preparation known as "white wax") is a substance mentioned in the "British Pharmacopœia" and is used in the preparation of certain medicines; (2) that the wax is used in the preparation of medicines as a vehicle only and not as possessing any healing or medicinal properties, and that the sale of beeswax by the respondent to the appellant was not, in their opinion, a sale of beeswax to the prejudice of the purchaser, because of the statement made by the respondent to the appellant's agent, though the article supplied was not of the sub-



stance, nature, and quality of the article originally demanded by the appellant; (3) that the sale of the said beeswax by the respondent to the appellant was a sale by the respondent as a grocer. They held that beeswax is not a drug within the meaning of the Act, and that if it is a drug the sale was not a sale to the prejudice of the purchaser, nor was the sale by the respondent, a grocer, a sale by him of a drug within the meaning of the Act, and they dismissed the information. The questions for the opinion of the Court were: (1.) Is beeswax a drug within the meaning of the Act? (2.) Was the sale of beeswax a sale to the prejudice of the purchaser? (3.) If yea, was the sale of beeswax by the respondent, a grocer, the sale of a drug within the meaning of the Act?

Mr. T. Mathew appeared for the appellant, and submitted that yellow wax and beeswax were substantially the same thing. If so, it was necessary to turn to the Act to see if yellow wax were within the definition of a "drug." The definition was not exhaustive, but beeswax was within the definitions given in Johnson, Webster, Skeat, and Chambers. Beeswax was also mentioned in the "British Pharmacopœia," which was made evidence by the Medical Act, 1862. "*Sands v. Small*" (3 Q.B.D., 449) showed that the statement of the seller was not sufficient to prevent the sale being to the prejudice of the purchaser.

The Court dismissed the appeal.

Mr. Justice Grantham said that, speaking for himself, he could not admit that beeswax was a drug. By going to the dictionaries and straining the definitions no doubt it would be possible to bring beeswax within some of them. Everyone could think of instances where beeswax was used not as a drug. It was sold by a grocer at a little country shop. The grocer did not make it. He said he did not know what its constituents were. The justices were right.

Mr. Justice Wright concurred. In many cases it was a question of fact as to whether an article was a drug or not, and the justices had found that it was not in this case. Whether the sale was a sale to the prejudice of the purchaser was a most important question, but it was not necessary to decide it, and he did not decide it.

Appeal dismissed.

#### ANOTHER EXPOSURE OF DANISH BUTTER.

WHAT have the Lincoln Guardians to say to this?—At Birmingham Police-court, on October 30th, before Messrs. Fisher and Warden, Wm. Belcher, postmaster at Small Heath, a grocer of Whitmore-road, was summoned for selling butter containing 20 per cent. of foreign fat.—Mr. Hiley, from the Town Clerk's office, said he feared defendant was one of the class of people who neglected to avail themselves of the protection afforded by the Act. They simply purchased goods without any warranty. The butter came from Denmark, and he dared say that even if defendant had a warranty the wholesale dealer would be quite safe in Copenhagen.—Mr. Parfitt, who defended, assured the Bench that his client had not made any profit out of the whole of this particular transaction, inasmuch as he sold the butter at the price he paid for it. In August this year there was a difficulty in getting butter, the price of which increased considerably. While things were at this famine price, he was offered an odd cask of butter as perfectly pure, and at a price in advance of that which he usually paid. He purchased it, and, in order not to lose his connection, sold it at the price he gave for it. He made a practice of selling that class of butter at 1s. a pound, whatever the wholesale price.—The Bench expressed the opinion that defendant sold the butter believing it to be pure, and that the case was not one of the kind in which they recently had to impose heavy fines in order to put down the atrocious custom of selling impure goods to the

public as pure. Defendant would only be fined 20s. and costs.

Will they persist in spending English money on Danish swindlers and boycotting English butter?

#### CHILDREN INJURED BY SKIMMED CONDENSED MILK.

At a recent meeting of the Willesden District Council, Dr. Skinner, the medical officer to the Council, in his ordinary report, stated that 58 cases of infant death had recently occurred in the parish from diarrhoea. The infant mortality of the parish was 53·90 of the total deaths during the past two months.—Dr. Stocker, one of the Poor Law doctors of the parish and a member of the Council, spoke of the great danger of feeding infants with condensed milk. In Willesden 28½ per cent., or more than a quarter of the infants born, died. The 58 deaths from diarrhoea were due to bad feeding, owing to the increased use by the poor of spurious condensed milk, skimmed, of poor quality.

#### ALCOHOL IN RELATION TO DIGESTION.

PROFESSORS CHITTENDEN AND MENDEL, of the Physiological Department of Yale University, have been investigating the influence of alcoholic drinks upon the chemical processes of digestion. The investigations were made by means of artificial digestive experiments, in which the digestive fluids were allowed to act upon the various food substances under definite and constant conditions. Absolute alcohol in four cases appeared to actually stimulate digestive action by a fraction of 1 per cent., but the amount of alcohol present did not exceed 1 or 2 per cent. Whenever alcohol was added in quantities over 2 per cent. digestive activity was markedly checked; in one instance, 3 per cent. of alcohol reduced the digestive activity by 17·6 per cent. Pure rye whisky containing 50 to 51 per cent. of alcohol yielded practically the same results; even an addition of 1 per cent. of this spirit was found, taking the average of the experiments, to reduce digestive activity by over 6 per cent. In three cases, however, an increase in digestivity of from 3 to 5 per cent. was recorded when additions of whisky in the proportion of from 1 to 3 per cent. were made. Brandy, rum, and gin gave practically the same results. Drs. Chittenden and Mendel consider that their experiments, as far as they go, justify them in concluding that "whisky can be considered to impede the solvent action of the gastric juice only when taken immoderately and in intoxicating quantities."

#### EXCESS WATER IN BUTTER.

A SUMMONS under the Food and Drugs Act against Martin Hopkins, provision dealer, St. Andrew-street, Ancoats, for selling samples of butter containing 21 and 23 per cent. of water, was heard before Mr. Headlam at Manchester, on Oct. 28. Mr. Rook, of the Corporation Sanitary Department, appeared in support of the summons, and the defendant was represented by Mr. Hockin. The facts of the case were not in dispute, and the defence was that a guarantee had been given. An inspector visited the defendant's premises, and purchased two samples of butter at 8d. and 10d. per pound. It was found on analysis that the butter contained 23 and 21 per cent. of water. Mr. Hockin explained that a firkin of the butter in question had been purchased from a wholesale firm of butter dealers in Hanging Ditch, and the invoice relating to the consignment contained the words "guaranteed pure." Mr. Headlam asked how it was that the same quality of butter was sold at 8d. and at 10d. per pound. Mr. Hockin said he understood that there was, for some reason, an objection in the trade to selling butter at 9d. per pound. After evidence had been called to show that the butter had been sold in



exactly the same state as it had been delivered to the defendant, Mr. Headlam decided to dismiss the summons. Mr. Rook intimated his intention of proceeding against the wholesale dealer. Mr. Hockin said the firm in question were willing to have the matter investigated, and were prepared to show they had purchased the butter with a written guarantee from one of the best houses in Ireland.—The summons against Edward Wood, who carries on business as a provision dealer in Rochdale-road, for selling butter containing 23 per cent. of water, was dismissed on the same ground. Mr. Rylance appeared for the defendant.—A similar case against Ernest Tonks, of Oldham-road, was adjourned till Friday, to allow of the defendant bringing evidence to show that the butter he sold was the same butter for which he produced a guarantee from a wholesale dealer.—The hearing of a summons against George Hooley, Wellington-street, was also adjourned to that day for a similar reason.—Joseph Atherton, of South Peter-street, was fined 10s. and costs for exposing unlabelled margarine for sale.

### WORKHOUSE MILK.

#### APPEAL TO THE HIGH COURT.

In the Queen's Bench Division of the High Court of Justice, on October 27, before Mr. Justice Grantham and Mr. Justice Kennedy, sitting as a divisional court, the case of the Queen *v.* Bretherton and others (justices) and Ward came on for hearing. This was a rule *nisi* calling on the Justices of Prescot to show cause why they should not hear and determine a summons. Mr. Swift supported the rule; the Justices did not appear by counsel, but sent an affidavit, which was read by Master Mellor, the Queen's coroner. In this they stated that an information was preferred against Thomas Ward by the guardians of the Prescot Union, who charged that on the 25th of February last he sold to the guardians, to the prejudice of the purchaser, milk not of the nature, substance, and quality demanded. The guardians had demanded new milk free from adulteration, while the milk supplied was adulterated by upwards of 25 per cent. of added water. The justices heard evidence for the plaintiffs, the cook at the workhouse proving that on the morning in question the defendant Ward came with his usual supply of milk to the workhouse. The cook told him that the master wanted to see him, but Ward said he had to catch a train, and must go. He then poured the milk into the guardians' can, and went away, but came back with the master, and the latter took samples of the milk which had been left. These were analysed and found to be adulterated to the extent named. The justices held that there had been at the time of the taking of the sample no acceptance of the milk and no sale. They also held that the proceedings were taken under a wrong Act, and they could not deal with the case.

Mr. Swift argued that the justices ought to have convicted. They had based their decision on a case which

had appeared in the *Times* only, but this had been overruled recently by three judges of the Queen's Bench.

The court made the rule absolute.

### WARWICKSHIRE COUNTY COUNCIL ADOPT OUR RECOMMENDATIONS.

LAST week Dr. Bostock Hill, county analyst, reported to the council that the samples analysed were: sugar (three), linseed meal (two), butter (thirty-one), coffee (seven), pepper (four), mustard (four), oatmeal (one), sweets (one), tea (one), lard (three), olive oil (one), flour (four), and precipitated sulphur (one). Four samples of butter were adulterated, being samples of low grade margarine, the quantities of foreign fat being respectively, 85, 85, 80, and 72 per cent. One of the samples of coffee was adulterated with 65 per cent. of chicory. The Sanitary Committee considered that the proportion of samples submitted should not be less than two per cent. per annum of the population. The estimated population of the administrative county was about 280,000, and while they found that in some districts the Acts had been fairly carried out, in others no samples had been submitted for analysis during the last three years. The committee suggested a series of recommendations, making a rule that the inspectors should submit for analysis at least two samples of food or drugs for each 1,000 of the population, and to prosecute in all cases in which the county analyst granted a certificate of adulteration.

### UNIFORMITY IN FOOD ANALYSES IN GERMANY.

In the land of William the Witless, musician, artist, playwright, etc., by proxy, and Emperor by misfortune, the question of uniformity in food analyses has just been discussed.

Geheimrath Koehler, director of the Imperial Board of Health, has just presided over a meeting of prominent food analysts from all parts of Germany, called together in order to work out fixed and uniform methods for the analysis and examination of food stuffs, milk, etc. These methods are henceforth to be followed by the public analysts of all the Federal States, and thus all apparent discrepancies in the results arrived at, which were inevitable sometimes as long as the standards of comparison and the methods of examination varied, will be in future avoided.

They are ahead of us in Germany in some things.

### THE LOCAL GOVERNMENT BOARD ON ADULTERATION.

THE annual report issued on October 29, says:—

"During the year 238 analysts have been appointed, and the report summarises the work in this department as follows:—

"The number of analyses made was 43,962, an increase of 4,400 over the number of 1894. In London, one sample was obtained for every 414 persons, and in

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the provinces one for every 736. There are still, however, many places in which either no samples, or a very insignificant number, are taken. In 13 boroughs, including Tynemouth with a population in 1891 of 46,588, and Southport (population 41,406) not a single sample of food or drugs was obtained for analysis, while within the jurisdiction of the County Councils of 11 counties, with a total population of nearly 900,000, and in 12 boroughs, with a total population of nearly 700,000, there were in all only 313 samples analysed. The result of this indifference on the part of the local authorities is seen in the fact that out of these 313 samples no fewer than 56, or about 18 per cent., were condemned, a proportion nearly twice as high as obtained in the rest of the country.

"For the year 4,093 samples were reported by the analysts as adulterated, and prosecutions were instituted in respect of 2,724 fines being imposed in 2,313 cases, amounting in the aggregate to £4,136 8s. 3d., excluding costs. The average penalty was thus £1 15s. 9d. In the case of one trader fines amounting to £55 were imposed in respect of several samples of adulterated butter under the Margarine Act and the Sale of Food and Drugs Acts. There were also in particular cases fines of £35 and £25 for offences against the Margarine Act; 14 fines were of £20 each, 7 between £10 and £20, 45 of £10 each, 20 between £5 and £10, and 163 of £5 each. Over three-fourths of the fines were of £2 or under, 201 being under 5s."

When we began this journal the samples taken were 29,000 yearly. They are now over 43,000, showing an increase of 14,000 per year, mainly caused by our outspoken and fearless advocacy of pure food for the people. If we needed any justification for our practice and belief that strong and plainly-understandable attacks on lying and frauds were and are needed, the above figures give it. Had we called a spade an agricultural implement and wasted paper in vapid polite sentences, there would to-day be about 33,000 samples taken for analysis instead of 43,000. We commend this fact to a few short-sighted critics amongst our readers who have at times recommended us to write in the orthodox style of the everyday useless and purposeless newspaper. Events have justified, and are justifying, our own beliefs.

#### PARAFFIN WAX IN CONFECTIONERY.

THE Birmingham authorities had another batch of cases before the courts for this offence on October 30.—Mr. Hiley, from the Town Clerk's office, who prosecuted, reminded the Bench that on a previous occasion Dr. Hill, the City Analyst, had described paraffin wax as not more easily digested than a paving-stone, and as exposing the lives of children who consumed sweets containing it to serious danger.—Mr. Fisher enquired what was paraffin wax, and was told that it was similar material to that from which wax candles were manufactured.—One of the defendants informed the Bench that the goods which he purchased were manufactured at Black Heath, Staffordshire, and that on the box was printed, "Guaranteed Pure." He had no means of telling whether they were pure. He simply trusted to the manufacturers. He only made 3d. on the sale of a box of the chumps, and until the recent prosecutions he sold about two a week.—Mr. Hiley said the sweets were simply the old-fashioned form of barley sugar dipped in paraffin wax.—Another defendant produced a piece of paving-stone and a piece of paraffin wax, and, referring to the latter, said he would eat it on bread and butter any morning, and would prefer it to pork pie. "But did the Bench think he would eat the paving-stone? Not likely!"—Mr. Fisher assured him that if he did not care for the health of the children of the city the authorities did.—The following were the defendants and the fines imposed: Arter and Freeman, Snow-hill,

£5 and costs in one case, and the costs in another; Arthur Bufton, Bristol-street, 40s. and costs; and Thomas Damphier, Icknield Port-road, £5 and costs.

#### SOME RESULTS OF ANALYSES OF TINNED MEAT.

THE public analyst for Rochdale thus reports on 13 samples of tinned meat analysed for impurities—especially tin and lead:—

"Neither metal was present in any of the samples. All of them were perfectly sound and wholesome. In several instances the solder was entirely on the outside of the tin, and did not come in contact with the meat in any way. . . . In my opinion," says the analyst, "it is only rarely necessary to examine samples of this kind, unless there is reason to suspect that the contents of some particular tin are injurious. Owing to the care taken in the preparation of this class of food, probably not one sample in a thousand is unwholesome, or contains anything objectionable."

#### THE SUFFICIENCY OF AN ANALYST'S CERTIFICATE.

##### IMPORTANT HIGH COURT DECISION.

IN the Queen's Bench Division on Oct. 28 (before Mr. Justice Grantham and Mr. Justice Kennedy), the case of *Bridge v. Howard* was heard.

It was a special case stated by two justices for Middlesex in regard to a milk adulteration case, and raised a point as to the sufficiency of the analyst's certificate.

Mr. Earle appeared on behalf of the appellant, the public analyst, and said the case arose in consequence of the decision of the Divisional Court in "*Fortune v. Hanson*" (1896, 1 Q.B., 203), when a certificate was held bad which stated only that the sample "contained the percentage of foreign ingredients as under 5 per cent. of added water." The certificate in this case was in the following words:—

"I, the undersigned, public analyst for the County of Middlesex, do hereby certify that I received on March 26, 1896, a sample of new milk (E.M. 159) for analysis (which then weighed 6oz.), and have analysed the same, and declare the result of my analysis to be as follows:—I am of opinion that it contains the parts as under—milk, 94 per cent.; added water, 6 per cent. This opinion is based on the fact that the sample contained 7.97 per cent. solids, not fat, whereas genuine milk contains not less than 8.5 per cent. solids, not fat. The sample had undergone no change which would interfere with the analysis."

At the hearing of an information, on April 24, against the seller of the sample of milk this certificate was tendered by the appellant, but it was objected on behalf of the respondent that it was inadmissible on the ground that it did not state specifically as the result of the analysis the parts contained in the sample analysed. The hearing was then adjourned, and on the rehearing the appellant contended that the certificate was valid and sufficient, and also tendered the oral evidence of the public analyst, who was present, as to the constituent parts of the sample, and as to the inutility of stating specifically the amount of the water and other constituent parts of the milk, having regard to the usual and scientific method of analysis and as to the proper manner of analysing milk. The respondent objected on the ground that proceedings for the recovery of penalties can only be maintained when a certificate in compliance with the statute has been given, and that the analyst could not by oral evidence supplement his certificate. The justices, being of opinion that the certificate was insufficient as not setting out specific quantities of all the constituent parts of the sample, and also that the proceedings could not be maintained in the absence of a certificate setting out the said quantities specifically,



declined to hear the oral evidence, and dismissed the information. Mr. Earl contended that the certificate was sufficient, as it gave the analyst's reasons for saying that a certain proportion of water had been added. The justices had the materials afforded them to enable them to say whether they adopted the conclusion arrived at by the analyst, and in this respect there was a difference from the certificate in "Fortune v. Hanson." It was proved that there was a certain deficiency of solids in the sample. Therefore a certain quantity of foreign ingredient must have been added; and inasmuch as the sample had undergone no change the foreign ingredient must be water. The analyst had made an analysis on a different principle to that contemplated in the case referred to, and he considered that it would serve no useful purpose to state the total amount of water in the milk, both natural and added. On the second point—namely, the refusal of the justices to hear evidence, he admitted that if the certificate was not in accordance with the Act, they were justified in refusing evidence. The point was, therefore, the same as to that part of the case as in the other.

The Court upheld the validity of the analysis.

Mr. Justice Grantham said the justices were wrong in rejecting the certificate. The analyst here had done enough in setting out the amount of solid substance which he found in the sample and basing his decision thereon. It was hopeless to go into the question of how much water there was in the milk altogether. In some cases rich milk which had been adulterated with added water contained less water than perfectly pure milk of a poor class. The analyst had stated the principle on which he came to his conclusion. It was simply a rule of three sum, and, in fact, he had rather understated matters when he gave 6 per cent. as the amount of added water.

Mr. Justice Kennedy, having been one of the judges in "Fortune v. Hanson," desired to add that he was still entirely of opinion that a similar certificate to the one in that case would be bad. It merely contained a statement of opinion that a certain percentage of water had been added, and it did not give the ground for that opinion so as to enable the justices or the party accused to test the accuracy of it. He thought it fairer that the proportionate parts should be set out, and as water was an ingredient in all milk, more was required than a statement that there was water added. Here the analyst not only stated that 6 per cent. of water had been added, but he gave scientific reasons for that statement. That made the difference between the certificate in this case and in the other. He concurred in thinking that this certificate was sufficient.

#### WAKING. PLYMOUTH UP.

THE quarterly report of the borough analyst stated that four samples of milk had been analysed, three being genuine and one adulterated with 30 per cent. of added water.—Dr. Kirton said it was ridiculous that in a town of that size only four samples should have been analysed during the quarter. Coffee, tea, and other articles should be analysed.—Dr. Rolston said a larger number of articles had been analysed in previous quarters.—Dr. Kirton suggested that the service of a constable in plain clothes should be obtained in procuring samples. The law allowed that to be done. Samples of beer and spirits should also be analysed.

#### DIGESTIBILITY OF COCO-NUT OIL.

EXPERIMENTS made by Dourot and Jean on coco-nut oil deprived by pressure of the greater part of its soluble glycerides prove that, other things being equal, the digestibility of the vegetable butter thus prepared is equal to 98 per cent., as compared with that of cow's butter at 95.8 per cent. During the experiments the cow's butter regimen showed a greater tendency to dis-

order the system than that of the coco-nut butter, being accompanied by eructations and diarrhoea. The specimen of coco-nut oil used had been purified by a special process, and was termed "taline." It melted at 31°, and contained only 1.156 per cent. of soluble glycerides, whereas ordinary coco-nut oil melts at 23°, and contains about 7 per cent. of soluble glycerides.—*Comptes rendus*, cxxiii., 587.

#### BORACIC ACID IN MILK.

##### ANOTHER FINE.

AT Birmingham, on October 30, Ann Wheatley, milk dealer, Edwardes-street, Balsall Heath, was summoned for selling milk adulterated with 65 grains of boracic acid.—A fine of 10s. and costs was imposed.

#### NOTES ON APENTA AND SOME OTHER BITTER WATERS.

BY JULIUS ALTHAUS, M.D.,

*Consulting Physician to the Hospital for Epilepsy and Paralysis, Regent's Park.*

THE individual differences which are found to exist in the chemical composition of mineral waters belonging to the same group are of considerable interest from a pharmacological as well as therapeutical point of view. Mineral waters generally contain one or at most two principal ingredients, in addition to which, however, there are habitually two or three other substances present which modify the effects of the prime constituents in a peculiar manner. These "modifiers," as I would call them, often occur in very small quantities, and have for this reason by many been considered as inoperative. Such an opinion, however, is erroneous, for careful clinical observation of the action of such waters shows the "modifiers" to be of considerable importance, so that a mineral water would find its individuality impaired or destroyed were they to be removed. I will remark in passing that this is the principal reason why artificial mineral waters in which the "modifiers" are often left out, in order to save trouble in the manufacture, have not the same therapeutical effects as natural waters.

Apenta belongs to the class of bitter waters, and contains, as its principal ingredients, the sulphates of magnesium and sodium, while its chief modifiers are the chlorides of sodium and lithium. The medicinal value of bitter waters in general depends to a great extent upon the relative proportion of the two sulphates contained in them.

Pharmacological experiments and clinical experience have shown that those waters act most pleasantly in which the magnesium preponderates over the sodium sulphate, while the chloride of sodium should not amount to more than about  $\frac{1}{10}$  or  $\frac{1}{20}$  of the two sulphates together. Where the sodium is in excess of the magnesium sulphate, the purgative action of the bitter water is *ceteris paribus* too violent; digestion is apt to be disturbed, and if the use of the water is continued for some time, debility and a degree of anæmia will be the result. On the other hand, where the chloride of sodium is in excess the water does not act so beneficially on the liver.

If we apply the above rules to some of the best known bitter waters we find that:—

1. Püllna water contains 123 parts of sodium against 93 parts of magnesium sulphate, with 16 parts of chloride. While, therefore, the proportion of the latter is good, the excess of the sodium sulphate causes those drawbacks which I have just mentioned, and which, although the water in question is a highly efficient purgative, have been so conspicuously felt in practice in years past, that this water is now rarely prescribed.

2. Rubinat water shows a still more marked preponderance of the sodium sulphate, as it contains



1,485 parts of it against only 50 parts of magnesium, the chloride of sodium being 31. What I have just said about Püllna would therefore apply in even a more marked degree to Rubinat.

3. Saisdschütz water has to be placed in the same category, for it contains hardly any magnesium at all, and owes its effect almost exclusively to the sodium sulphate.

4. Friedrichshall water appears to be decidedly superior to the three waters just mentioned, as it contains 46 parts of sodium against 39 parts of magnesium sulphate. The excess of the sodium sulphate, which in Rubinat and Saisdschütz is overwhelming, is therefore in Friedrichshall only 7, which explains the milder and more agreeable effects of the latter. On the other hand, the excess of chlorides in this water is formidable, as it amounts to 99 parts, that is, 14 parts more than the two sulphates combined. This renders the Friedrichshall water somewhat similar to sea water. Indeed, the water of the Baltic does not contain as much—namely, only 67 against 99; while the Atlantic, the Mediterranean, and the Dead Sea contain respectively 203, 225, and 543 parts of NaCl.

5. Hunyadi János water shows a slight excess of the sodium over the magnesium sulphate, namely, 1,578 against 1,564, with 119 parts of NaCl. The latter proportion is far better than that contained in Friedrichshall, and this is probably the reason why the Hunyadi water has recently been employed preferably to the latter.

6. Franz-Josef water has very nearly the same chemical constitution as Hunyadi János, namely, 24.65 parts of magnesium, against 24.06 of sodium sulphate and 1.673 of NaCl. This composition easily explains the generally favourable results which have been obtained from this water.

7. Æsculap water is one of the best of this group. It contains an excess of the magnesium over the sodium sulphate, namely, 172 parts against 139, and a favourable proportion of NaCl, namely, 29.

8. Apenta water shows an excellent proportion of sulphates and chlorides, the magnesium amounting to 24.49, the sodium sulphate to 15.43, and the NaCl to 1.87. It is therefore a most useful aperient. In addition to this it contains an appreciable amount of lithium chloride, by which it is distinguished from all the other waters of this group. Although the quantity of this constituent is small, it is for that reason by no means devoid of effect as a "modifier."

I may here aptly draw attention to the very small quantity of iron contained in such powerful chalybeates as Spa and Schwalbach (Pouhon 0.375, and Weinbrunnen 0.443 grains in 16 ounces of water). Again, the Kreuznach Elisenquelle, which is so highly effectual in the treatment of scrofula and allied conditions, contains only 0.035 grains of magnesium iodide in 16 ounces, and the Purton water only 0.066 of sodium iodide in the imperial gallon. The presence of lithium in Apenta water explains, therefore, why a course of the latter is so useful in warding off attacks of gout, and in moderating their intensity when present.

It is useful to know that in cases where we are obliged to give morphine in somewhat considerable quantities, either *per os* or hypodermically, as for instance in the gastric crises of tabes, and in severe and obstinate forms of neuralgia, Apenta has an excellent effect in neutralising the prejudicial action of morphine on the hepatic functions. In some of these cases I had previously given small doses of mercury, podophyllin, and other drugs and mineral waters for that purpose, but none of them equalled the beneficial effect of Apenta in this respect.

The same water is useful, as an adjuvant to other treatment, in threatened cerebral hæmorrhage in the aged, where there is high tension in the vascular system, with confusion, drowsiness, etc. On the other hand, it sometimes fails to relieve obstinate constipation which arises from deficient nervous influence, as in

certain forms of spinal disease, where more stimulating aperients, such as cascara sagrada, etc., find their appropriate sphere of action.

## CORRESPONDENCE.

### COFFEE HOUSES AND RESTAURANTS.

To the Editor of FOOD AND SANITATION.

SIR,—I was glad to see in your issue dated Oct. 24, an expression of your opinion *re* Coffee Houses and Restaurants. I should perhaps first state that, in the district which I have the privilege to represent, such places have received marked attention since the beginning of 1892, and for your information I have referred to the register, and although prosecutions are not now so frequent as in the past, yet I find of the total number of samples of milk taken at places of that description during the period mentioned, 46 per cent. have been found sufficiently inferior to warrant magisterial proceedings being instituted.

Like yourself, I should be glad to know when any attempt has been made to obtain samples from City restaurants, and further if any sample of BUTTER has ever been taken in the Central Market, or if the traders there and the City authorities are aware of the existence of a Margarine Act.—Yours, etc.,

AN INQUIRER.

### SALTS OF SORREL IN PATE DE FOIE GRAS.

Pâté de foie gras has a somewhat evil reputation for and unexpectedly creating disturbances of the digestion, the cause of which has never been satisfactorily tracked. Gourmets have experienced after a repast that the much esteemed delicacy has, as our contemporary the *Revue de Thérapeutique* graphically puts it, "traitreusement bouleversé leurs entrailles." M. Peres attributes this, at any rate sometimes, to the presence of acid oxalate of potassium in the goose livers, which form the fundamental ingredient in the pâté. It appears that certain farmers mix a little powdered salts or sorrel in the food with which they "cram" the geese, and this "remedy" as they call it, causes a rapid enlargement of the liver in the unfortunate bird. In one instance a bird was poisoned by an overdose in this manner. The practice would not appear to be general and to be kept strictly secret by those who employ it, since it enables them to obtain larger livers with less trouble, and in a shorter time than by the old system of feeding.

### THE PRESERVATION OF PERISHABLE FARM PRODUCE

By ALFRED SMETHAM, F.I.C., F.C.S.

(Continued from page 526.)

WITH regard to meat, the farmer, so far as his marketing is concerned, could scarcely improve upon his present methods. As a rule, cattle or sheep are sold alive, and if the markets are adverse, he can, up to a point, continue his feeding. In any case it is doubtful whether, by any system of cold storage or other means of preservation, he would be able to obtain sufficient control over the markets, loaded as they so continually are with foreign meat, to warrant such an outlay. The butcher, on the other hand, usually buys only as he requires the meat for distribution, and it is only under exceptional circumstances that any difficulty is found in disposing of it before decomposition sets in. An ice-chest in summer is usually all that he requires.

Indirectly, the preservation of foreign meat affects the English farmer, but most adversely. In the case of foreign meat, which is now imported to such a large extent from America, Australia, and New Zealand,



artificial means of preservation are absolutely essential. The first attempts at importing foreign meat were made by canning. To carry out this process, the meat or similar article is placed in tins, soldered completely, with the exception of a small outlet. The contents of the tins are then raised to a temperature of boiling water, by which means the micro-organisms, which have been introduced with the meat during the process of cutting it up and preparing it for the tins, are killed, and while still hot, the tin is hermetically sealed, so that no fresh organisms can find an entrance. Preserved in this manner, meat may be kept for an almost indefinite time, provided the process has been properly carried out; but the method has the disadvantage of partially destroying the flavour, and consequently, tinned meats have not found as much favour with the public as was anticipated in the early days of their production.

The widespread introduction of tinned meats has been checked by the improvements which have been made in the importation of fresh meat, both alive and dead. The method by which dead meat is carried on long journeys is simple in principle, but required considerable experience in practice to make it a financial success, but it is now so well understood that meat can be brought from the Antipodes and marketed here in a perfectly fresh condition. The theory on which the process is based is simply this—At a temperature about the freezing point of water the putrefactive organisms, previously described, are unable to propagate, and as organic changes do not take place, except by the intervention of these organisms, the meat can be kept sweet for long periods. One of the difficulties which had to be overcome was due to the fact that if the meat were kept at a temperature below the freezing point the water in the meat became frozen, and, expanding, burst the tissues, in much the same way as the water service pipes of houses are burst during a frost. When meat, which had thus been frozen was distributed under the ordinary conditions, the micro-organisms, carried by the air, were able more readily to find an entrance, and such meat went bad comparatively readily in exposure. Now, however, by improved apparatus, the temperature on board ship is maintained steadily at a point a little above the freezing point, so that while the growth of organisms is practically checked, the meat is delivered in much the same condition as it was shipped.

When carried alive, the meat arrives in England usually in good condition, except for the injury which may occasionally be done during stormy passages. As these consignments arrive by large vessels, and as often a considerable number of cargoes are due about the same time, it is necessary, with the present compulsory slaughtering at the port of arrival, to employ cold storage, in order to avoid a glut in the market, but with this exception, the foreign meat which is brought here alive, competes, unfortunately, on pretty nearly equal terms, with our home-grown produce. It is a matter of common knowledge that in our large towns, especially those in close proximity to the port of entry, the greater part of the meat sold by the butchers at the price of prime English meat is of foreign origin, and the home producer is prejudiced accordingly.

Whether imported dead or alive, the great bulk of foreign meat is both wholesome and palatable, but it is high time that some means were adopted to prevent the ruin of the British agriculturist for the benefit of the retailer. There is a sufficient population of well-to-do people who are quite willing to pay remunerative prices for prime home-grown meat, and it appears to me only right that these should be protected from fraud in the same way that, in regard to meat, Parliament considers it necessary to prevent the sale of margarine for butter. Doubtless there are difficulties in framing any Act of Parliament which could be readily and effectively carried into practice; but, considering the enormous interests involved, interests alike of artisan and agri-

culturist, it does appear to me to be a subject which farmers have a right to insist upon, and which should not be found too difficult of solution by our present powerful Board of Agriculture.

Next in importance to meat, milk must claim attention, both with regard to the extent of the industry, and its importance as a food. Unlike meat, it is a liquid, and any organisms falling into it can be distributed throughout the mass much more readily than in the case of a solid. The composition of milk also is such that it lends itself very readily to decomposition, more particularly with regard to the milk-sugar which it contains, and, hence, it goes sour very quickly when kept under conditions which favour the growth of the lactic ferment.

With the increase of our urban populations, the necessity for a liberal and pure milk supply to the towns has become more and more imperative and important, and, as the Health Authorities place greater restrictions upon the town dairies, the importation of country milk, carried often long distances by railway, has become an important industry. As a rule, the conveyance by train is as expeditious as the exigencies of the case permit, but, nevertheless, there must often be a considerable lapse of time between the milking of the cows and the distribution and consumption of the milk. This being so, it is exceedingly important, both on the score of health and from a financial point of view, that such precautions should be observed as will enable the milk to be kept sweet for as long as possible, and it may not, therefore, be out of place to consider the means which the farmer has at his disposal to attain this end.

When in the udder, milk may be considered free from bacteria, but directly it is milked it is exposed to innumerable sources of infection, to avoid which entirely would, even with the most perfect conditions, be impossible. It must be remembered, however, that, other things being equal, the rate at which milk will go sour will be dependent upon the number of micro-organisms which have found their way into the milk, and as the reproduction of these organisms goes on with ever increasing rapidity, it is those which are earliest introduced which will do the most damage. From this statement, which is self-evident, a moral may be drawn. It is that, during the milking process, the introduction of micro-organisms be prevented as far as possible. Among the means to be adopted, which are the most obvious, but which, I fear, are in too many cases "more honoured in the breach than in the observance," are cleanliness of the cows, and more particularly of their udders; cleanliness of the milkers, especially their hands; cleanliness of the shippens, by frequent lime-washing and periodic removal of the manure, and, above all, cleanliness, bacteriological cleanliness, of the vessels used for milking and for receiving the milk. To attend to these matters requires constant supervision and a little expense; but I look upon a strict observance of the conditions just mentioned as the key to any successful milk supply. In other words, two main objects have to be kept clearly in view; first, the prevention of the introduction of ferments as far as it is practicable, by the observance of cleanliness in every detail, and second, the retardation of the growth of those which have inadvertently found an entrance.

Of the first head, I have sufficiently treated, except, perhaps, to say that in the cleaning of tins, churns, etc., it is necessary to use *large quantities* of boiling water, or, better, to subject them to the heat of free steam for some time, so as to ensure the complete destruction of the bacteria which have found a lodgment on the surfaces, and more particularly in the crevices, of the vessels. Unless the temperature of the metal is raised to nearly the boiling point of water, the cleaning will have been imperfect.

(To be continued.)



To the Grocers, Provision Merchants, Pastry-Cooks, Confectioners, and  
the Public of the United Kingdom.



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and 173, Ladbroke-grove, W.  
G. S. E. Newcombe, 78, Westow-street, Upper  
Norwood.

George Olsen, Chingford.  
Thomas Pelling, Broadway, Barking, E.  
G. H. Page, 43, Castle-street, Oxford-street, W.  
Parker's Stores, 112, Norwood-rd.,ulse-hill, S.W.  
Jno. Phillips, 12, Circus-rd., St. John's Wood, N.W.  
A. Rake, Craven-passage, Strand, W.C.  
J. W. Robey, 204, Bow-road, E.  
Sargeant & Co., Park Hall Stores, High-road, E.  
Finchley  
Sherwin & Wallis, 136, Seven Sisters'-road.  
J. Sitton, 37, London-road, Southwark.  
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A. C. Smith, 134, Petherton-road, Highbury.  
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Wakefield & Sons, 140, High-road, Streatham,  
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# Food & Sanitation

THE PUBLIC ANALYTICAL JOURNAL.

[Registered at the General Post Office as a Newspaper.]

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LONDON: SATURDAY, NOVEMBER 14, 1896.

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## Food and Sanitation.

SATURDAY, NOVEMBER 14TH, 1896.

### LONDON WATER.

THE late Cardinal Manning once remarked to the writer that Sir John Lubbock always struck a low note upon a public question. It would be hard, indeed, for anyone to strike a lower note than that sounded by Sir John Lubbock in a letter a column and three-quarters long to the *Times*, of November 9.

Sir John puts forward a scheme of control by means of a Bill (1) to limit the right of the companies to make up their back dividends to the maximum of 10 per cent. within reasonable limits—say, six years, as in the case of the gas companies; and (2) to place on the board of each company representatives of the London County Council and of any outside district interested;

and he urges that the maximum dividend in the case of the Southwark and Vauxhall Company must be reconsidered.

This is a proposed solution in the teeth of scientific proof that London water is semi-filtered sewage and drainage, for which, unless efficient filtration on the Pasteur principle be installed, it would be a crime against public health to pay anything. The *British Medical Journal* last week, writing on the existing water supply, says:—

"It follows that the continuance of the present supply would involve 1 out of every 25 inhabitants of London in serious illness at some time in his life; and if the case-mortality of the water-borne disease which he happens to get is the same as that of typhoid in London, it will mean the death from an avoidable cause of more than one man in every 150 of the whole population. We state these consequences in this manner, not as representing exact figures—for, if exact figures could be obtained, there is every reason to believe that they would be substantially larger—but to indicate the gravity of the disclosures which have been made and the enormous interest which the metropolis has in obtaining a pure water supply."

Again, our contemporary says:—

"It is now shown that the London water supply is from time to time grossly polluted with sewage which the filter beds of the water companies fail to arrest, and it seems probable that this condition of things exists more often than not."

Those who, like Sir John Lubbock, Lord Onslow, and Mr. Beachcroft, seek to restrict Londoners to the existing water supply incur a grave responsibility, and their actions are distinctly against public health in London. In such a question shibboleths like Moderatism and Progressism should have no place. It touches the health and life of every resident of London, and ought to be above jobbery or party feeling.

### THE "DAILY GRAPHIC" ON ADULTERATION.

OUR contemporary has some queer writers. On November 9th, it says:—

#### "ADULTERATION IN EXCELSIS.

(FROM A CORRESPONDENT.)

"An investigation which has recently been carried out by the Department of Agriculture for the State of Pennsylvania, has produced some startling figures with regard to the adulteration of food and food products in the United States. In the annual report which has just arrived in this country, we are told that experts estimate the value of the food and food products consumed in the United States at no less than £900,000,000 a year; while the National Department of Agriculture, at Washington, estimate the average rate of adulteration at not less than 15 per cent., making the annual national loss from this source alone not less than £135,000,000 sterling annually. Other estimates put the loss from food and drink alone from adulteration at £266,000 a year in Ohio; at £2,250,000 annually in Massachusetts, and at £1,200,000 a year in Pennsylvania. The investigations of the Pennsylvania chemists go to show that the adulterations are largely confined to the substitution of lower-grade articles for the purpose of enabling manufacturers and dealers to compete with other low-grade goods. The cases in which materials injurious to health are used are rare, and, except in the case of the use of copper for colouring pickles, might possibly be attributed to accident rather than design. Even with this, however, the above figures are very startling."

An investigation appears necessary into the mental capacity of the *Daily Graphic* editor for printing such ridiculous nonsense as the above. If we assume that 15 per cent. is the average rate of adulteration on a total



consumption of £900,000,000 of food products that does not show a loss of £135,000,000 per year. The *Daily Graphic* thinks that the 15 per cent. of adulterated articles cost nothing. Even a *Daily Graphic* editor ought to have more sense than to print such a stupid statement. The 15 per cent. of adulterated articles may have enabled the fraudulent makers and vendors to pocket an extra 10 to 20 per cent. profit on the goods, but the total profit would be a very different thing to £135,000,000. The editor of the *Daily Graphic* may have sufficient intelligence to grasp this obvious truth. Unhappily the *Daily Graphic* is not alone amongst dailies in supplying its readers with silly twaddle.

#### THE BOARD OF AGRICULTURE PROSECUTES IN A LARD CASE.

AT Westminster, on November 6, the Board of Agriculture appeared against Mr. George Nicholls, wholesale provision merchant, of Wood-street, Westminster, for alleged offences under the Merchandise Marks Act, 1887, with regard to the sale of lard described as "Pure Bladder Lard, refined in Belfast—produce of the United States of America." There were three summonses in respect of three different alleged offences under the Act against the defendant, but Mr. Safford declined to have them heard together, and Mr. Bodkin elected to proceed first on the charge of defendant's having possession of forty-four barrels containing bladders of lard to which a false trade description was applied.

The learned counsel said the Board of Agriculture regarded the case as one of much importance. There was no suggestion against Mr. Nicholls' respectability as a trader; he was a gentleman in a large way of business in the district of the Court; he was prosecuted because it was thought better to proceed against the wholesale merchant than to gibbet the small tradesmen who sold the lard supplied them, perhaps without the opportunity of knowing that it was adulterated. As his Worship was doubtless aware, lard was the rendered fat of the flare of the pig. Pure English lard required no artificial stiffening, but some pig fat, particularly the fat of American pigs, was soft, oleaginous, and creamy, and could not be sold as lard unless it was stiffened in some way or another. The practice was to stiffen it with beef stearine. This afforded the public a really compendious way of eating part of a pig and part of an ox—(laughter)—but it was not thought right that they should be under any misapprehension about it. The lard which was the subject of this prosecution, and which contained 10 per cent. of the stearine, was consigned to Mr. Nicholls by a Mr. Topping, of Corporation-street, Belfast, who had registered the Snowdrop trade mark. Mr. Topping was not very popular among his rivals in the trade, for they had instituted prosecutions against him and his customers on several occasions, both under the Merchandise Marks Act and the Food and Drugs Act. This had an important bearing on the present case, because it would be proved that the defendant Nicholls had seen reports of these prosecutions in a trade newspaper, and that after that he continued the sale of the lard, choosing to rely on Topping's warranty on the invoices that it was pure "within the meaning of the Sale of Food and Drugs Act." A warranty of any sort was no defence under the Merchandise Marks Act, and the defendant was, therefore, personally responsible for sales to retailers.

Detective-sergeant Edward Drew, of Scotland-yard, proved that in August last, in company with a Mr. Moore, of the Bacon Curers' Protection Association, he made large purchases of the suspected lard at the defendant's warehouse. Each barrel that was bought was stencilled "pure bladder lard, refined in Belfast," etc. On one occasion, when Mr. Nicholls was present, he (defendant) said that it was consigned by Topping and Co., of Belfast, and that he was aware that for

months past persons had been prosecuted for selling it, and that some cases had been dismissed.

Cross-examined by Mr. Safford, the witness said he could not admit that the prosecution was instigated by bacon curers in Ulster.

Mr. Safford contended that the description on the outside of the barrels, "Pure Bladder Lard," etc., coupled with the words, "Produce of the United States," constituted a warranty under the Act protecting the consignee.

Sergeant Drew: I should say it discloses another offence in affixing an English trade mark to a foreign article.

The further hearing of the case was adjourned.

Our readers will remember that as long ago as November 5, 1892, we wrote exposing the American lard game, saying:—

"Topping's lard, we are advised by a responsible correspondent, contains, according to the analysis of Mr. A. H. Allen, Vice-President of the Society of Public Analysts, as high as 15 to 20 per cent. of beef stearine and palm-nut stearine. Topping's is marked on the barrel-head 'pure bladder lard,' and in very small letters are the words 'produce of the United States.' On the bladders are the words 'Topping's Snowdrop brand,' with a picture of a snowdrop and the words 'guaranteed pure.' This lard is sold in large quantities throughout the country, but particularly in Bristol, Plymouth, Swansea, Newport, and Cardiff, and mainly sold as 'pure Irish lard.' We hope inspectors under the Food and Drugs Acts will look out for Chamberlain, Roe, and Co.'s and Topping's lards, and by bringing prosecutions in every possible direction, protect the public and assist native industries. To America we owe no kind feeling. Their McKinley tariff was deliberately contrived to crush our trade. They have flooded our markets with quack nostrums, tinned foods, and beef teas that contain injurious preservatives, adulterated lard, bacon and hams cut and branded as English and Irish, and scores of like impostures that cripple our home industries. The Food and Drugs Acts Inspectors who take samples and persistently punish such frauds are doing the best and most patriotic work that is done in our day."

The Board of Agriculture have only been *four years* in acting upon the information we then gave the department. We have struck a special leather medal for Mr. T. H. Elliott and the Right Hon. Henry Chaplin. They merit some reward for such conspicuous ability and promptitude. When we receive a little more red tape from the Local Government Board the rewards will be forwarded.

#### THE PURE BEER COMMITTEE.

THE Earl of Pembroke presided at the fourth and last sitting for the present of the Departmental Committee appointed to inquire into beer materials, held at Abingdon-street, Westminster. Mr. Alderman E. J. Grummitt was the first witness called. He said he lived in the neighbourhood of Bourn, in South Lincolnshire, and was not only a brewer, but a rather large cultivator of land. He was not a large brewer. His business was principally among farmers and labourers, and he brewed only for the demand in the district. He had used no barley but English for thirty years. In the wet seasons of 1879 and 1880, when we had very wet harvests, he was obliged to use some sugar in consequence of the faultiness of the malt. Since those two years he had never used substitutes or adjuncts. He now brewed lighter and cheaper beer than he brewed ten or twelve years ago. In brewing these beers he had not to make any alterations in the preparations; he had merely to be more careful about the fermentations. He had no doubt that hop substitutes were used, but not so much now that hops were cheap. Asked if he had any proof that such substitutes were



used, he said that at one time he was "inundated with samples," and travellers had tried to sell them. He did not know of any brewery in which hop substitutes were used. He suggested that the Excise should add to their brewing paper columns to show the quantity of English and foreign hops used. His impression was that a very small quantity of hop substitutes had been used of late years.

Mr. A. Gordon Salamon, analytic and consulting chemist, said the beers were now of a lighter quality than formerly. It was quite impossible to brew wholly with prepared malt adjuncts, and if English brewers were to hold their own it was quite impossible that they could brew wholly from English barley malt. If the use of malt adjuncts were prohibited, the only effect would be to increase the purchase of foreign barley. Questioned as to the employment of hop substitutes, the witness said that to leave out hops when beer is being brewed would mean the production of a beer that we do not know at all to-day. As to the increase in the price of quassia in a year that the hops failed, he explained that a large quantity of it went to Kent, where it was used for washing the hop-bines when lice and mildew abounded. Moreover, he found on inquiry that there was a kind of "corner" in such products as Columba, gentian, quassia, and tonic bitters, and the price was thus forced up. In his opinion, hop substitutes could never usurp the place of hops. Foreign hops were a greater rival to English hops than substitutes. He did not see how such a measure as Mr. Quilter's Bill could ever work.

#### IMPORTANT EXCESS WATER IN BUTTER CASE AT RAMSGATE.

AT Ramsgate, on November 2, before Capt. L. W. Vaile (in the chair) and Mr. S. R. Wilson, John Ellis, manager of the International Tea Stores, 10, King-street, Ramsgate, was summoned by W. D. Millard, inspector under the Food and Drugs Act, for unlawfully selling to the prejudice of the complainant a certain article of food, to wit, butter, which was adulterated with five per cent. and upwards of added water, on October 13, 1896.—The Town Clerk (Mr. W. A. Hubbard) appeared for the prosecution, and Mr. Frederick W. Beck (Messrs. Neve and Beck, solicitors, London) defended on behalf of the International Tea Company.—The Town Clerk, in opening the case, said on October 13 the inspector under the Act purchased a number of samples from the different grocers in the town. He went to No. 10, King-street, Ramsgate, a grocer's shop under the management of the defendant, and asked for a pound of butter, and a certain article was supplied to him. The sample was sent to the analyst, and was found to contain no less than 21·13 of added water.—Mr. W. D. Millard, inspector under the Food and Drugs Act, said he went to No. 10, King-street and asked for a pound of butter. He then informed the seller that it was his intention to have it analysed by the public analyst, and he offered to have the butter divided into three parts, an offer which was accepted. He divided the butter into three parts in the presence of the defendant. One part he left with the defendant, the second he delivered to the public analyst on Oct. 14, and the third he now produced. He afterwards received a certificate from the analyst showing that the sample contained 5 per cent. and upwards of added water.—By Mr. Beck: I know that all butter contains some water.—Mr. Sydney Harvey, examined by the Town Clerk, deposed: I am public analyst for the Borough of Ramsgate. I am a Fellow of the Institute of Chemists, a Fellow of the Chemical Society, I have been on the Council of the Society of Public Analysts for 18 years, and I have been four times Vice-President. I take an interest in the question of agricultural produce. The largest amount of water that should be found in butter as usually supplied is 14 per cent., but analysts fix the

extreme limit at 16 per cent.—Mr. Beck: Is it quite right to call it "added water"?—Mr. Harvey: I call it "excessive water," or "excess of water."—Of course, we all know that there is a certain amount of water in all butter? Yes.—And when the butter is once manufactured ready to be put on the market no one would suggest that anyone could add water to it? I do not suggest it myself.—I do not know whether you have been told that this is an Irish butter?—I was not aware what butter it was. I have not been informed.—It was a salt butter?—Yes.—Will you take it please (because I am going to prove it) that this is an Irish butter?—I am willing to take it.—You are aware, Mr. Harvey, that there have been found very large amounts of water in Irish butter?—That, unfortunately, has been a subject of dispute for some time. It has been the case that more water has been supplied with Irish butter than other butters.—I have no doubt as you take an interest in this matter you know it is attributed to the fact that small Irish farmers have no scientific appliances?—That is so.—I daresay you followed to some extent the evidence that was given on this question before the Select Committee?—I have, very carefully.—And you will be aware that it was proved before them that percentages very much larger than this were found in Irish butters?—Occasionally, certainly.—Up to 30 per cent., and even more than that?—I am afraid there were some even as high as that.—Mr. Beck read an extract from the report of the Select Committee, which stated that 32 per cent. and even as much as 42 per cent. had been found in Irish butters.—Mr. Harvey said he remembered 32 per cent., but not the 42 per cent.—In answer to a further question witness stated that the analysts throughout the Kingdom had set up a standard. There was no statutory standard.—In reply to Mr. Hubbard the witness stated that butter with 42 per cent. argued great carelessness in making and great profit to the person disposing of it. He had attended a great many dairies in the course of his enquiries, and water could always be excluded over 14 per cent.—Capt. Vaile: And do you say "and should be"?—Mr. Harvey: And should be.—By Mr. Hubbard: The average of the other samples sent him on the day in question was 11 per cent.—Mr. Beck, in defence, submitted that this was not a case which came within the provisions of the section. It had been very clearly stated by Mr. Harvey in cross-examination that this was not added water, but merely excess of water. It occurred from the fact that the Irish manufacturers had not scientific appliances with which to make their butters, and the result was that a larger percentage of water remained in the butter than when made in a scientific manner. His clients were in a large way of business, having branches in 200 towns in the country, and took the greatest precautions to prevent anything of the sort because for the sake of their reputation they were bound to supply, and did supply, substances to meet the public demand. He was going to prove that this butter was bought in Ireland, shipped over to England, sent down to the branch here and sold in exactly the same condition that it was sold to the firm by the small farmer in Ireland. The firm's system was to keep a man in Ireland going round to the different markets buying butter, and shipping it over to this country. It was stated before the Select Committee of the House of Commons that there were a great many difficulties in connection with the Irish manufactured butter. Unfortunately there were no central depôts or creameries as there were in other countries. The Irish farmer made his butter himself. He had got no apparatus with which he could treat it with cold water, or artificial cold air. He simply used the water from the well with which to cool the cream, and the result was that there was no opportunity of getting the moisture out of the cream. It was represented by the committee that it would be well to fix a standard, but it was also pointed out that to do so 80



per cent. of the Irish trade would be destroyed. He submitted that as a matter of justice it would be unfair to convict, and as a matter of law he submitted that the water being there in the process of manufacture there was no offence according to law. — John Ellis, the defendant, said he was manager of the International Tea Company's Stores, 10, King-street, Ramsgate. He obtained his supply of goods from the headquarters of the company, Mitre-square. On Oct. 8th he received the butter from which this portion was sold. The butter was sold in the same condition as it was received from headquarters. — Robert Douglas Cudby, the manager of the Provision Department at the International Tea Company's Offices in Mitre-square, London, said from the central establishment the company supplied the various branches. The butter in the present case would pass through his hands as manager of the department. He received the butter in question from the buyer in Limerick, who bought the butter at Ennistymon market. He dispatched it to Ramsgate, but between the time of its receipt in London and its despatch to Ramsgate nothing was done to it. He sent it here exactly in the same condition as it was received from Ireland. He was familiar with the process of the manufacture of Irish butter, and he agreed with Mr. Harvey as to the difficulties in the matter. In warm weather it was impossible to get all the water out of the butter which ought to be got out. The reason for it was ineffectual appliances. The same difficulty did not arise with butters of other countries where the butter was made in central creameries with modern appliances and plenty of ice in the summer time. — The magistrates retired and returned after a considerable absence. The Chairman said it had been a very difficult case for them to decide. There had been some recent decisions, which, to his mind, rather showed that if they did convict, their conviction probably might not hold good. They thought that with a firm like the one in question it was a duty devolving upon them to see that there was not an excess of water in the butter, or at any rate when a customer came he should be informed that such was the case. The magistrates considered in this case there was an excess of water in the butter, but no doubt it was there in the usual process of preparation. It was not "added water." Certainly the least that could be done was that the purchaser should be informed on all occasions. The case would be dismissed.

#### THE SANITATION OF FOREIGN HEALTH RESORTS.

AN Ambassador has been described as a person who lies abroad for the benefit of his country. We have not heard any terse description of a *chargé d'affaires*, but the following letter makes us think one is required:—

"MADEIRA.

"Sir,—Several English newspapers having published the statement, from private sources, to the effect that the sanitary condition of Madeira was unsatisfactory, I beg to avail myself of your columns to make it known that such a statement is entirely without foundation, and that there is no epidemic disease in that island, nor has the percentage of mortality increased in any way with reference to the last 20 years.—Yours, etc.,

"A. DE CASTRO, Portuguese *Chargé d'affaires*.

"12, Gloucester-place, Portman-square, Nov. 9."

Concurrently with this very sweeping assertion a correspondent says:—

"Last winter and spring, owing to the polluted state of the water supply, there was an epidemic of typhoid fever in the island. The number of deaths among the Portuguese was not really known, as every effort was made to conceal this dangerous state of affairs. And so the English visitors wintering there for health and enjoyment fell unawares victims to this deadly disease, and during March and April there were five deaths among

them of people in the prime of life, while eighty others were more or less seriously attacked. Being myself one of those mourning the loss of a beloved relative I feel impelled to warn everyone of the awful danger that exists in this most lovely health resort."

As this flatly contradicts the Portuguese *Chargé d'affaires* and is moreover a very grave charge against the Portuguese authorities, the subject is worth a little close consideration. Unfortunately for Mr. A. de Castro, the British Consul reported on August 22:—

"I have no hesitation in saying that persons visiting Madeira run a very serious risk of infection; this is entirely due to the bad water supplied to the town."—Funchal. After speaking of the typhoid epidemic, he goes on, "After much delay the municipal authorities had the water from every fountain analysed. The result was somewhat alarming, as it was found that only one fountain in the town contained water fit for consumption." One well under the Government House, which supplied a large number of people with drinking water, was proved to be polluted by the sewage matter of two adjacent cesspools, which had not been cleared out for years!

We would like to believe Mr. A. de Castro, but the facts are too strongly against him. Would-be Madeira goers had better take warning, and avoid Madeira as they would a pest-house, and if in the face of these facts certain fashionable physicians order patients to Madeira instead of to healthy English resorts, the patient may safely assume it is done for reasons other than the patients' health.

#### HAMPSTEAD VESTRY AND ADULTERATION.

MR. STOKES, the analyst, during the year analysed 301 samples, consisting of milk, 50; butter, 48; lard, 2; groceries, 78; spirits, 49; drugs, 42; temperance beverages, 30; sausages, 1; and ice cream, 1. Of these, 7 samples of milk, 2 of butter, and 4 of spirits proved to be adulterated.

"It is to be noted," he says, "that one quarter of the adulterated milk samples were obtained from a local hospital. It would, in my opinion, be very advisable to arrange with the authorities of all the public charitable institutions in the parish to take samples regularly of the milk supplied to them. It is especially necessary to protect the invalids and the children of the poor from any tampering with this, their chief supply of nutriment."

The temperance beverages were all of them found to be pure and wholesome, and free from any metallic contamination derived from the apparatus used in their manufacture. Of the 30 samples no less than 20 were not absolutely free from alcohol; quantities varying from  $\frac{1}{2}$  to  $1\frac{1}{2}$  per cent. of proof spirit were found in these. The quantity was due to the fermentation of the ginger beers, hop ales, etc., and to the small quantity of spirit in which the flavouring ingredients are dissolved. This small percentage of alcohol, unavoidably introduced during the manufacture, is too small to detract from the good qualities of these beverages.

Fines for adulteration, ordered to be paid into the Vestry's account, amounted to £24 3s.

#### NORTHUMBERLAND COUNTY COUNCIL AND THE ANALYSIS OF SEEDS AND FEEDING STUFFS.

THE Executive Committee (Diseases Act) reported: "An application has been made by Dr. Voelcker, the analyst appointed by the county under the Fertilisers and Feeding Stuffs Act, 1893, for the payment to him of an annual retaining fee in recognition of his office. Under a resolution passed by the County Council in February, 1894, it was ordered that Dr. Voelcker be paid one guinea for each analysis; it was further ordered that one-third, or seven shillings, should be paid by the person applying for the analysis, and the



other two-thirds, or fourteen shillings, should be paid by the County Council. It appears that since the Act came into force there has been only one sample submitted to Dr. Voelcker. This might at first sight lead to the supposition that the Act in question is a dead letter. But it is the opinion of some members of the committee that the Act has a wholesome and deterrent effect upon those who supply feeding stuffs and manures, inasmuch as the knowledge that there is an able official to whom suspected food or fertilisers can be submitted, makes them specially careful that the goods they supply shall be genuine and unadulterated. The county analyst is paid a retaining fee of £10 10s., besides another fee for everything submitted to him. The committee recommend that Dr. Voelcker be paid annually a fee of £5 5s. in addition to the remuneration he receives for the analyses that he makes upon samples submitted to him."

Alderman Scott said there had been a great improvement in the quality of articles since analysis and inspection came into use. (Hear, hear.)

The report was adopted.

### HOW MUCH LONGER WILL THE "LANCET" DEFEND MURDEROUS AMERICAN OIL?

THE explosion of a paraffin lamp caused a fire at 17, Wells-street, Maryland Point, Stratford, on Tuesday evening. The house was occupied by a family named Curley, and nearly all were in bed at the time. They were aroused and rescued, but not before three of them had been seriously burned. Cornelius Curley was injured about the arms and legs, his son Edward about the body, and his daughter Laura, aged six, on the arms, legs, and face. Edward is in a critical condition. The house was burnt out.

If Cornelius Curley objects, as he possibly may do, to his home being burnt out and his son, daughter, and self being roasted alive, it will soothe him to know that the *Lancet's* opinions about such horrors are that they are "shrieking nonsense." If Rockefeller and his confederates owned the *Lancet* it could not outrage truth more than it has done for their benefit.

### LAKE WINDERMERE BECOMING A CESSPOOL.

THERE are certain crimes against civilisation which, unfortunately, are not hanging ones—Foyers to wit. Windermere, according to Alderman N. K. Armitage, chairman of the Parliamentary Committee of the Lancashire County Council, is in a condition requiring somebody's intervention. "The lake," he said, the other day, "was becoming little better than a huge cesspool, and he did not think they ought to stand by and allow that sort of thing to go on. The committee asked for power to take such steps as might be necessary to bring the matter to a satisfactory solution." The sewage of Bowness and other places goes into it, and nobody has powers to prevent its pollution. Lake Windermere is surrounded on three-fourths of its shore by the county of Lancaster. That portion of the shore which belongs to Westmoreland is from the north of the lake to a place known as Storrs Hall. But the county of Westmoreland claims that the whole of the bed of the lake belongs to them, as being a portion of the township of Applethwaite. The growing importance of Windermere owing to the increased railway facilities and the thousands and tens of thousands who visit it year by year, and the certainty that it will increase in the future, renders it necessary that someone should attend to two special matters—the traffic upon the lake and its sanitary condition. The Lancashire County Council are seeking for authority to preserve Lake Windermere from becoming a cesspool, and in this they have our hearty good wishes.

### THE CRUSADE AGAINST MARGARINE.

AT Royston, on Nov. 4, William Overton, provision merchant of Hitchin, was summoned by Mr. Thomas Johnson, Inspector under the Food and Drugs Act for the Hertfordshire County Council, for selling, to the prejudice of the purchaser, one pound of butter, which when analysed by the public analyst, Mr. A. E. Ekins, St. Albans, was found adulterated with 75 per cent. of margarine, and further with selling one pound of margarine without the same being branded or marked in accordance with the Margarine Acts. Mr. Passingham, solicitor, of Hitchin, appeared for the defendant, and said he admitted the offence. There was no dispute as to the facts. If, under the circumstances, the Bench did not think it necessary to hear the evidence, perhaps he might have the opportunity of explaining how the case arose. His client had carried on business for some years and had a stall at Royston Market. On Wednesday, Oct. 14th, Royston Fair day, he was there, and the girl now in the witness box, came to the stall and asked for 1 lb. of "10d. butter." At that time butter was at a much higher price. The girl asked for 10d. butter, and a package was given to her with a label in big letters, "Margarine," but the package was put into a wrapper which did not happen to have the word "Margarine" upon it as it should have had. He admitted that the girl did ask for butter.—Mr. Johnson called a girl named Edith Davis, who said she lived at Hertford. On Oct. 14 she was at Royston at the Fair. She went to Mr. Overton's stall and asked for 1 lb. of 10d. butter.—Mr. Overton made no remark. There was no margarine label on the particular piece of paper it was put in, but there were labels on the stall. She handed the package to Mr. Johnson, the inspector.—By Mr. Passingham: There were tin labels with big letters, "Margarine," on the stall at the time.—By Mr. Johnson: If he had said he had no 10d. butter I should have asked him the price of the butter, and had a pound at the price he asked.—The Chairman asked if she expected to get good butter at 10d.—Mr. Passingham wished to remind the Bench that his client at once told the inspector that if the child had asked for butter he had served her with the wrong article, with "Margarine." He therefore submitted that this was not a case of wilful intention to defraud, but that it was an accidental occurrence. Defendant admitted that he had committed a technical offence, and was prepared to pay such penalty as the Bench might impose, but he said that for a case of this description the justice of the case would be met by a very small penalty.—Mr. Johnson asked if it was necessary for him to prove submitting the sample for analysis and the analyst's report.—The Bench did not think so.—The chairman said defendant had acknowledged the offence, and they took a lenient view of the case. He would be fined 20s. and costs in the first case, and 10s. and costs in the second.—Upon the application of Mr. Johnson, the Bench allowed in the costs 15s. for the analyst's fee.

### A GRIMSBY MEAT CASE.

THE Grimsby magistrates, on Nov. 2, fined J. Sewell £10 or a month's hard labour under the following circumstances: Sewell, with a man named Hay, occupied adjoining stables, and Mr. H. F. Moody, Borough Sanitary Inspector, on visiting the premises, found there four quarters of beef, and other parts of a cow, which were unfit for human food. The meat was seized and afterwards destroyed in accordance with the law. The stables in which the meat was found and was slaughtered was not a licensed slaughterhouse.—Alfred Paterson, 5, Kay's-buildings, Victoria-street, a hawker, said he had helped Sewell and Kay to drive the cow to the slaughterhouse in Hope-street, on Friday, June 26. The cow was coughing a good deal. After they had failed to get somebody else



to slaughter the beast it was taken to the stable in Hope-street, and there slaughtered in witness's presence, at four o'clock in the morning of Friday, June 28th.—Mr. H. F. Moody gave evidence that the meat was unsound, diseased, and quite unfit for human food. The meat was properly dressed for sale, part of it being hung in Sewell's stable, and part in Kay's. In reply to questions, Sewell had said that the lungs were buried; that he had "swopped" a horse for the cow with a man on the road to Horncastle; and that it was killed in a shed on the road, and brought to those stables in a cart. Afterwards, however, Sewell admitted that the cow was slaughtered in his stable. Sewell also said he would get 2s. a stone, which, since he said the horse was worth 70s., would be a loss of 10s. Sewell further stated that he and Kay were joint tenants of the stables, and were "standing in together with this affair." In a conversation with Kay in the presence of Sewell, Kay made the same false statements about the slaughtering of the cow, but afterwards admitted the truth. Sewell, after a good deal of hesitation, said he knew the meat was diseased, but said he had not intended it for sale unless the Inspector passed it. As to the lungs, Sewell first said they were burned in Clee-lane, but they were eventually found in the muck-pit in the yard round the stables in Hope-street. Witness took the meat to Dr. Newby, the borough medical officer, and to Mr. Loft, veterinary surgeon, who both examined the meat, and said it was diseased. It was then taken to Alderman Jackson, who gave an order for its seizure.—By Mr. Barker: Sewell did come to see witness on the morning of the charge, about eight o'clock, and asked him to look at the meat.—Mr. Loft, veterinary surgeon, and Dr. Newby, medical officer of health, gave evidence as to the state of the meat, saying it was suffering from tuberculosis, and unfit for human food.—Mr. Bannister: Would not cooking tend to diminish the harmfulness of the meat?—Mr. Newby said it was too risky. Meat so diseased was liable to generate a similar disease in those who ate it.—George Cox, foreman to the Grimsby Corporation, said he had searched for the buried lungs of the beast in question, and finally found them in the manure heap at the yard where Sewell's stables were.—William Lands, a labourer, of Hope-street, said he had been told by Sewell that he had a beast for sale on Friday, June 27. If witness could sell it he was to have a commission. He asked one or two possible buyers about it, but they said they had offered a price for the beast when it was alive, but would now have nothing to do with it until Mr. Moody had seen it.

#### CAUTION TO THE MILK TRADE.

OUR contemporary, the *Cowkeeper and Dairyman*, says:—"We are informed, on very substantial authority, which we believe is perfectly reliable, that some unscrupulous persons are selling analine dyes as annatto to unsuspecting dairymen who want stuff cheap. Pure vegetable annatto is perfectly harmless, analine dyes are poisonous, so that too much care cannot be taken in purchasing and selecting, and the old reliable makers should not be lightly discarded. One case of proved negligence will lose you your business, and serve you right."

#### A CO-OPERATIVE SOCIETY AND ITS MEAT.

AT St. Helen's Police Court, on November 6, the St. Helen's Industrial Co-operative Society were fined £15 and costs for depositing for the purpose of sale unwholesome meat. The evidence showed that when the meat inspector of the Corporation discovered the diseased meat the servant of the society tried to practise a deception on him. The magistrates expressed the opinion, however, that the society would not knowingly allow such an offence to be committed.

## CORRESPONDENCE.

### THE PETROLEUM LAMP ACCIDENTS QUESTION.

To the Editor of FOOD AND SANITATION.

SIR,—I venture to offer the following in support of your remarks of last week upon the "annotations" that appeared in the *Lancet* of October 31, wherein this paper criticised a letter which has appeared in the technical press expressing an American opinion of this question, and showing up a few of the peculiarities that at present are inherent to the discussion of the question in this country.

It was with interest that I read some time ago the *Lancet's* enquiry and report upon the lamp question, as I hoped to learn from the commission something either new or helpful. Whatever the merits of the recommendations then made may have been, I was surprised to read, in a paper which claims such a high standing, the strictures which appeared in the issue previously referred to.

I have no personal interest or stake in the matter, but such attention as has been paid to the matter by me has been prompted by a desire to get at the root of the evil. I have found after a long time that to do this it is necessary to go a long way away from all "oil people" for information. The comments in the *Lancet* are, however, a revelation to me, as, although I do not profess to have gone into the matter as thoroughly as their commission, I have gone quite far enough to find that I am fitted to rank with a certain number of those who claim to be "authorities." I can anticipate the retort as to a "little knowledge," etc., for, after what I have read in the *Lancet*, it cannot be used as an editorial argument against the following contentions, lest it should come home again to roost.

Reference is made to "a certain oil trust" as if they were legion. Surely all the history of this Trust (which is legally and nominally extinct) is known to those who criticise so freely American testimony? If it is not, it is then a much easier thing to value the capabilities of the critic.

A great feature is made in the all weak simile in the letter discussed, but picking holes in this one comparison will not and cannot mend the breaches made by the other points of the letter in the arguments the *Lancet* seeks to propound.

The great grief to me is that a paper like the *Lancet* should not for the sake of its oft-repeated claims to superlative perspicacity and impartiality, have published this letter that is so full of ignorance and "shrieking nonsense;" thereby sustaining its reputation, and driving home to the hilt the point of its editorial sarcasm. On the contrary, the policy adopted is that of the wholesale suppression of the awkward points, while an attempt is made to raise a cheap reputation by the aid of carping criticism.

The sweeping assertions that those who write have only a "commercial" interest and "have not the smallest acquaintance or experience of its practical side," are too intensely amusing for such a serious paper as the *Lancet*. It is true that nine out of ten people who have given this question an hour's thought, have discovered that many—very many—of those who are so blindly enamoured of low flash oil, have a decidedly, not to say sordidly, "commercial" incentive, but as it happens, in this particular case, the cap does not fit at all. In point of fact, if it were possible to disclose the name of the author of the letter the *Lancet* so carefully suppresses I have excellent grounds for stating that even the seers of the *Lancet* would be silent and compelled by the fear of expressing their ignorance to sit as students at the feet of a second Gamaliel.

Everybody is, of course, at liberty to draw any hair-brained deduction from a statement, but as touching



the expectations, to which expression is given on page 1244 of the issue referred to above, it can only be said that the testimony of the American law courts is of a tougher nature than the writer is evidently aware.

It is something more than a mere revelation to learn from the editorial columns of such a paper that the would-be censors have not dipped deep enough into the waters of knowledge to have learned for themselves that our *Petroleum Acts do not regulate the sale of petroleum*, but only the lighter products, such as petroleum spirit and naphtha.

To have to correct such elementary errors in those who pose as mentors is like having to coach an examiner in his *materia medica*.—Yours, etc.,

CECIL H. NEW.

#### PECULIAR CAUSES OF HAY FEVER.

AMONGST the causes or supposed provocations of this disease are some which appear incredible. Cullen refers to a case in which the most intense agony was induced by the vicinity of a rice-threshing floor, regardless of the period of year at which the grain was separated from the husk. Sir Thomas Watson mentions a servant employed in the laboratory of St. Bartholomew's Hospital who had the peculiar ill-luck to be liable to this affection when in the presence of ipecac, and whenever this drug was in preparation he was obliged to fly the place; and he adds, "This idiosyncrasy is by no means uncommon." William Smith records instances of "hay" fever provoked by linseed meal, and by mustard; William Murrell, by powdered colocynth ("May apple"), the effluvia of a clean pocket-handkerchief fresh from the ironing-table, locust-tree blossoms, mulberry blossoms and fruit, etc.; Sidney Ringer, by the exhalations from monkeys, dogs, cats, horses, rabbits, guinea-pigs, cattle, and wild animals. Hyde Salter tells of a clergyman in whom an attack was always induced by the vicinity of a dead hare, and hence he was always able to detect a successful poacher; this gentleman once had a severe attack in consequence of a hare-skin placed under his sofa as a joke. H. Charlton Bastion also, in the *Philosophical Transactions*, relates like effects as invariably produced on himself while working at the anatomy of the *Ascaris megaloccephala*, or "mange" insect of the horse. Ringer and Murrell report the case of a young gentleman, many of whose relatives suffered from "hay" fever, one sister being a "cat asthmatic;" he was always made worse by the vicinity of equines or of persons who had been about stables; and one night an attack suddenly supervened in a theatre, without any appreciable reason until, suddenly, a horse galloped on to the stage, when the young man was forced to leave the building. The exfoliations from the glands on the inner aspects of the legs of the horse are very irritating to the writer.

The following case, taking from Ringer and Murrell, is unique:—

A gentleman of neurotic temperament, about the age of fifty, suffered from acute pleurisy, the result of exposure to cold and wet while out shooting, and ever afterwards was subject to what he called "hairy-caterpillar asthma." If by any chance he touched a caterpillar, especially a very hairy one, he was immediately seized with a "hay" fever paroxysm lasting an hour or more, and that began with sneezing, itching, and irritation of the eyes and nose, with profuse watery discharge from both. He was not in the slightest degree affected by pollen, and could pass hours in the presence of animals without inconvenience. One of his daughters was a "cat asthmatic."

Several cases of interest, as showing the influence of light as an exciting cause, are related by the same authors, and one is also a good example of what may be termed the mixed paroxysmal phase of the malady, the attacks being induced not only by pollen, but by other causes:—

The widow of a clergyman has suffered many years.

The attacks occur all the year round, but are more severe in the summer. They often occur the first thing in the morning, as soon as she begins to move in bed. They are excited at any time by grasses, roses, privet, and in less degree by other flowers. Driving in the face of a strong wind will always bring on an attack. Any dust, especially that of a bed-room, is equally efficient, and sunlight is also a frequent exciting cause. Food at once affords relief, even when no stimulant is taken, the symptoms subsiding before the meal is finished. She never catches cold in the head, and the chest is not usually affected. The attacks last from one to two hours, and are followed by great exhaustion, but are always aborted or relieved by going into a dark room. It is worth mentioning that her daughters suffer from the same complaint.

These are exceptional cases, says the *Medical Age* (Detroit) which might be multiplied by citations from different authors. The ordinary "hay" fever, or paroxysmal periodic coryza, is of annual recurrence, and returns oftentimes on the same day each season, almost the same hour, in each individual; in very few cases is there a variation of more than a few days. But it is not of equal severity in each year, since it is more or less dependent upon the character of the season and meteorological conditions; in some it never exceeds in severity a mild cold, while in others it is a most serious affair, perhaps attended with a profuse expectoration of mucus soaked with blood.

#### MIGHT HAVE BEEN ANOTHER MAYBRICK CASE.

DR. DAREMBERG, Paris, records how once it was suggested that a man had been poisoned. The body was exhumed, and, sure enough, arsenic was found in the tissues. Yet the man had died of consumption, and the arsenic had been quite properly prescribed for him. Then arsenic was thought to have caused the demise of a distinguished foreign personage. Dr. Daremberg was able to show that the arsenic had been got into that personage by the harmless, necessary embalmer. All the same, the door was open to trouble, and, as things are, remains open.

#### A BOY'S CAST-OFF SKIN.

A FLORIDA paper reports that an eight-year-old boy has shed his skin. That on the face came off separately, but from the neck down the cuticle moved off by way of the hands and feet without breaking.

#### THE PRESERVATION OF PERISHABLE FARM PRODUCE.

By ALFRED SMETHAM, F.I.C., F.C.S.

(Concluded from page 538.)

THE second point is as important as the first. To better understand the principle which must govern successful working, it is necessary to keep in view the conditions under which the lactic ferment develops most rapidly. It has been found that this takes place at a temperature between 90°-100° F., and as milk, as it leaves the cow, is about this heat, it follows that if kept in bulk it is under the very conditions which will most conduce to the reproduction of those organisms by whose subsequent growth the milk will be turned sour. Hence, after collecting the milk under the most favourable conditions, it is necessary to reduce the temperature of it as quickly as possible, and this should be done by passing over a refrigerator, through which a plentiful supply of cold water is kept running. The colder the milk is when it leaves the refrigerator, the better; but it ought, if possible, to be reduced below 60° F., because at that temperature, and below, the growth of the lactic ferment is slow. Means have been devised by which milk can, directly it leaves the cow, be raised to a high temperature (160° F.



or above), by an apparatus similar to a refrigerator, heated with steam, and then quickly lowered to below 60° F.; but there would, on most farms, be a difficulty in getting a sufficient supply of water, and it is open to some little doubt whether the momentary heating which the milk would receive would be sufficient to kill any large proportion of the lactic bacilli which might be present. At all events, it seems to me that the precautions already indicated are quite sufficient to meet the requirements of the milk trade as ordinarily carried on.

Unfortunately, instead of finding the remedy for sour milk in the precautions I have indicated above, many farmers and a large proportion of milk dealers endeavour to overcome the difficulty by the use of antiseptics. It is impossible to take up a dairy or agricultural paper without seeing the flaring advertisements of various forms of so-called milk preservatives, usually sold at considerably above their true value, which the public are assured are both efficacious and safe. I must confess to a sense of disappointment at this evidence of a growing demand for, and increased use of, quack nostrums, the composition and medicinal properties of which the users are entirely ignorant, and I cannot allow the matter to pass without expressing my firm conviction of the injury which the uncontrolled use of these preservatives does to the health of those who are most dependent upon milk as a source of food. It is exceedingly difficult to trace the causes of the high infantile mortality of our towns to the proper sources; but it does seem to me a crying shame that children and invalids who are most dependent upon a milk diet, and whose digestive organs are the weakest, should be permitted to be dosed with unknown quantities of antiseptics. But apart from the injustice to the purchaser there are more sordid reasons why the British agriculturist should refrain from the use of antiseptics. Of late years there have been indications that the foreigner, not content with obtaining a large share of our trade in butter and cheese—underselling us in too many instances with adulterated articles—was desirous of filching our milk trade also; but to do this successfully it will be necessary to use large quantities of antiseptics. If, then, our own farmers are to make any effective protest against the importation of milk from abroad they must do it on the ground that the foreign milk is dangerous to the health of the community, and next to uncertainty as to the sanitary conditions under which such milk is produced, the fact that it is largely laden with antiseptics is the most telling objection; but that this cry may be an effective one the British farmer and dealer must enter the crusade with clean hands.

In the manufacture of butter the same care should be observed in the collection of milk as was advocated when the milk was intended for transportation to long distances, except that where a cream separator is used, the cream should be taken previous to the refrigerating process. By that means the whole of the butter is separated from the bulk of the water, milk-sugar and casein (on the two last of which most micro-organisms can flourish), and the subsequent fermentations can be controlled to a much larger extent than when butter is made by churning the whole milk. That we have not yet reached perfection in the fermentation of cream previous to churning seems pretty evident, but, judging from the reports of experiments made abroad, we seem to be on the eve of a more rational system. At present the cream is simply kept in a moderately warm place until, by the aid of such organisms as may have found an adventitious entrance, the cream has become slightly sour. This "ripening" of cream is necessary to cause the whole of the butter to "come" during churning, but it is quite possible and probable that during the "ripening," organisms, other than those required for the production of the necessary acid, find admission, and, by their growth at a later period, cause the butter to go bad much more quickly than if the fermentation had been controlled by the introduction of the proper

ferments. In the churning of the cream and the subsequent washing and working of the butter nearly all the remaining casein and milk-sugar should be removed, if the operations have been properly conducted, and the water should be so worked out as to leave not more than from 10 to 16 per cent. in the butter. If the water used in the churning is pure (a point of very great importance in butter-making) the butter should keep a fortnight or three weeks with only a small addition of salt, and this, for the purposes of sale as fresh butter, is usually quite sufficient. When salted down in crocks the addition of considerable quantities of salt forms a brine solution with the water left in the butter which prevents the growth of putrefactive organisms, and such butter, protected from the further introduction of micro-organisms, may be kept in a sweet, but salt condition for long periods. What has been said with regard to the control of temperature in the preservation of milk applies with equal force to the keeping of butter, and in this direction I believe there is a field open for cold storage which might play an important part in preventing the glut in the market so often noticeable in rural districts during the summer.

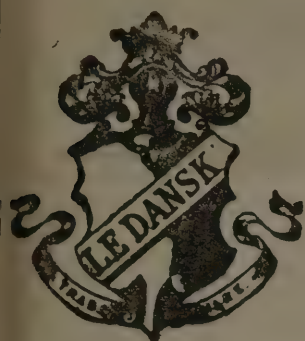
While on this point I should like to express the opinion that a good deal might be done in assisting agriculturists if at convenient centres up and down the country means for cold storage were provided, where, at a nominal cost, perishable articles such as butter, poultry, etc., could be kept until the markets were favourable, and where ice, during the hot summer months, could be obtained at cheap rates. At first, doubtless, such undertakings would scarcely be profitable, but as the farmers of the surrounding districts become educated to the advantages which would undoubtedly accrue from their general use I see no reason whatever why such installations should not only be self-supporting but even profitable. To my mind the chief difficulty in inaugurating such a system is, in the present state of public opinion, to find the money to pay for the initial cost of constructing the necessary buildings and buying the plant; but, once the method is proved to be feasible in some selected district, I see no reason why such undertakings should not be started as co-operative concerns in much the same manner as cheese and butter factories are formed.

The manufacture and curing of cheese, dependent as they are on various fermentative processes, are subjects too wide to treat adequately here; but there can be no doubt that the general principles laid down in the earlier parts of this paper apply with equal, or greater force, to this important industry.

Of late much has been written and said with regard to the growing of fruit and the preservation of it in various ways—and, although the success of such undertakings has, up to the present, not been attended with such success as is likely to prove an incentive to further efforts in this direction, I cannot resist the impression that in the future, British agriculture, if it is to hold its own in the increasing competition with the world at large, must apply itself more assiduously to what may be termed the manufactures of the farm in contradistinction to mere production of produce. If in the rural districts such industries as the manufacture of condensed milk, jam, cider, preserved fruits, etc., could be started, much of the immigration of the rural population to towns might be prevented, and farmers generally, having more than "one string to their bow," would not be left at the mercy of the middlemen and the markets. Believe me, in these days of keen competition the salvation of agriculture will not come by the application of any specific, however specious it may appear; and it can only be by the adoption of up-to-date methods and the introduction of new processes by which all the produce of our farms may be turned to better account, that the British agriculturist can hope successfully to compete with the combined industry and intelligence brought to bear against him from all quarters of the globe.



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# Food & Sanitation

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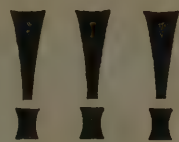
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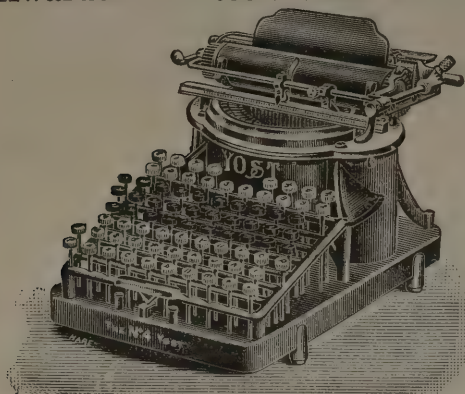


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Food and Sanitation.

SATURDAY, NOVEMBER 21ST, 1896.

CHEMISTS AND MEAT EXTRACTS.

We are no advocates of prescribing by chemists or of dispensing by doctors, although both too often occur. As a general rule, it may be laid down that of drugs, their analysis, variations, sophistications, etc., doctors do not know a great deal, whilst it is a chemist's business and practice, and it has necessarily been his training to familiarise himself with the properties of drugs. The fact that there are brilliant examples amongst medical men to the contrary does not vitiate the argument, for it is the exception which proves the rule. When it becomes a question of a proprietary article it often happens that both professions are in the condition of knowing scarcely anything about it. This is only what may be expected if we examine closely into the circumstances connected with the production of a proprietary article, because we find that medical

practitioners and retail chemists seldom take the trouble to thoroughly examine the proprietary article for themselves. Since we broached this question of the public analysis of proprietary foods a few years ago a truer knowledge has spread itself as to the values of many largely-sold articles. Who, for example, five years ago would regard with surprise a physician who would recommend Valentine's Meat Juice, or any of the Liebig's Extracts of Meat as valuable nutrients? Very few, assuredly, although it is more than twenty-four years ago since Liebig himself disclaimed any nutrient value for his Extract of Meat. It is nearly as long ago since Dr. Edward Smith, F.R.S., drew this acknowledgment from Baron Leibig, and closed a public controversy with the eminent scientist by a letter to the *Times* of October 1, 1872, saying:—

Let it be clearly understood that at length the Baron is in accord with other scientific men, and that all may adopt the words of Liebig; neither tea nor extract of meat is nutriment in the ordinary sense, and all that I have contended for is accomplished. Then we shall no longer have sick and dying men, women and children fed with it under the delusion that it is nutriment in the ordinary sense. Liebig's extract is meat flavour, a nervous stimulant, and has good qualities, but it is not food.

In his work on *Foods*, published in the International Scientific Series by Henry S. King and Co., Cornhill, London, in 1872, Dr. Edward Smith, writing of Liebig's extracts, stated that what was necessary to render this extract as valuable as the meat itself for the purposes of nutriment was to restore the substances rejected in its manufacture, which Dr. Smith showed are almost equivalent to the whole of the meat. Such being the case, "there is but little left in the extract," says Dr. Smith, "to nourish the body, and the elements which it really possesses are salts, which may be obtained otherwise at an infinitely smaller cost, and the flavour of meat which disguises the real poverty of the substance." . . . Used alone for beef tea it is a delusion.

The following analyses, specially made for us by a distinguished analyst, showed the nutritive value of extracts of meat, essences of beef, and meat juices to be in many cases very slight:—

|                                                                            | Brand's Essence of Beef (3 ounces equal 1/2). | Liebig's Extract of Meat. | Valentine's Meat Juice. | Mason's Essence of Beef, cost | Armour's Extract of Meat. |
|----------------------------------------------------------------------------|-----------------------------------------------|---------------------------|-------------------------|-------------------------------|---------------------------|
|                                                                            | pr cent.                                      | pr cent.                  | pr cent.                | pr cent.                      | pr cent.                  |
| Water .. ..                                                                | 91'23                                         | 16'87                     | 55'24                   | 77'07                         | 15'85                     |
| Ether Extract .. ..                                                        | 0'18                                          | 3'04                      | 4'80                    | 1'34                          | 2'63                      |
| Albuminoids and Peptone with small quantity of Gelatine (flesh formers) .. | 3'79                                          | 9'55                      | 2'48                    | 3'03                          | 10'89                     |
| Creatin and Meat Extractives (almost non-nutritious) .. ..                 | 3'96                                          | 47'32                     | 18'27                   | 7'47                          | 43'23                     |
| Mineral matters, Salts of Flesh Phosphates, etc. ..                        | 0'84                                          | 22'54                     | 11'13                   | 9'51                          | 25'91                     |
| Non-nitrogenous extractives .. ..                                          | None                                          | 0'68                      | 8'08                    | 1'58                          | 1'49                      |
|                                                                            | 100'00                                        | 100'00                    | 100'00                  | 100'00                        | 100'00                    |



The actual gelatine and albuminoids, or, plainly speaking, the nutrient value in the two extracts of beef enumerated above were for Liebig's Extract less than *one and a-half* per cent., and for Armour's Extract less than two and a-quarter per cent. As to the nutrient value of Valentine's, Brand's and Mason's preparations, it is somewhat startling to learn that the analyses showed less than one per cent. in Valentine's Meat Juice of Gelatine and Albuminoids, one and a-quarter per cent. in Brand's Essence of Beef, and only some two and a-half per cent. in Mason's Essence of Beef. It has been our duty to protest against the popular delusion that such articles are nutritive, because we have had sad experience that they are not. We have done a great deal to break down the superstitious belief in the food value of meat extracts, essences and juices, and can congratulate ourselves on the fact that fewer dying men, women, and children are to-day fed with these phantom foods than was the case when Liebig declared the worthlessness of his Extract of Meat, and when we first published reliable analyses of the bulk of the meat extracts, essences, and juices as a food. Something more is required, however, than destructive criticism. The public ask for meat foods, and even if the chemist suspects the food asked for to be practically useless as a nutrient he may doubt the value of some other much-praised article, for it is not to be expected that he can devote his time to making analyses, for his own information, of the scores of proprietary articles he sells. Outside of the popular delusion that articles like Liebig's Extract of Meat are foods, they are very valuable for their stimulating power, and this is beyond question, and they are also of great service in the kitchen for soups, flavourings, and gravies. Their improper use is when they are given as invalid foods, and in dispelling the prevalent public ignorance on this vital question the chemist has it in his power to do much public service, whilst saving himself a great deal of worry. The conscientious chemist who sees some person who can ill afford the extravagance, enter his shop and ask for a bottle of Valentine's Meat Juice, for example, must feel (knowing what he does from the above analyses) that it is a shame so much good money should be paid for such a food. It is a nice question in ethics if it is the chemist's duty to ask if such a preparation is for a sick person, and enlighten the purchaser, or take the money and be satisfied with the profit, and be content to let someone who may be the sole breadwinner for a family be starved into the grave. It is not a consoling thought for a chemist to have that he is, by vending such preparations without giving an explanation of their scant nutrient value, assisting in perpetuating a dangerous delusion by which thousands of lives may be sacrificed. Dr. Fothergill, in his *Manual of Dietetics*, puts this view of the case very strongly.

He wrote:—

All the bloodshed caused by the warlike ambition of Napoleon is as nothing compared to the myriads of persons who have sunk in their graves from a misplaced confidence in the food value of beef-tea. As a food it is but as a mirage of water seen by the thirsty traveller in the desert: There is no real water. So with beef-tea: it is not food. A traveller once requested some chicken broth at an inn; when brought, its quality was indifferent. Complaining that there was nothing of the chicken about it, the waiter assured him he was mistaken. "It was made from water in which a chicken had paddled." In so far as that fluid was chicken broth is beef-tea a food.

There is another point of view from which the retail chemist might well consider this question. He is expected to stock a quantity of each of the proprietary articles. The fewer proprietary articles he stocks the better for him, as every thinking retail chemist is rapidly realising, because he is being made into a mechanical distributor of tabloids of this and that, and exploited for the benefit of certain wholesale drug firms. The time seems rapidly approaching when the dispensing chemist will have no dispensing to do, when he will be regarded as a machine to dole out this

patent pill or the other patent tabloid, a feat requiring as much intellectual exercise as is displayed by the average draper's shopman. This all makes for a lowering of the status of the pharmacist. The bulk of the patent drug trade is a curse to the chemist and degrading also, for the greater its extension the more the retail chemist becomes at the mercy of monopolists. It is therefore all-important that chemists everywhere should discourage the sale of preparations they know to be worthless, or misleading, and the more so if they can make them themselves and have thus the satisfaction of knowing that they are not aiding in any deception of their customers. With scores of articles chemists can do this, and in their own interests they ought to do it. Where the articles are such as they cannot prepare without great trouble and expensive plant, then the most useful, and in the long run better in a business sense, course for the chemist to pursue is to sell only reliable articles of whose *bonâ-fides* he has absolute proof.

Up to the last few years all meat extracts were a sham. Merits they did not possess were claimed for them, and the few medical men and chemists who exposed their worthlessness cried vainly aloud in a wilderness of ignorance or indifference. If a chemist has the means to make a real meat extract for himself, our advice to him is to make it by all means, and at the same time make a clean sweep of the delusions from his shelves. If he has not the means to make his own meat extract, common sense and his customers' well-being point out that he should sell the one of real value. If he sells for an invalid Bovril for Invalids, for example, at 1s. 3d. per two ounces and takes the trouble to analyse it he will find that it yields results like this:—

Analysis of Bovril for Invalids:—

|                              | Per cent. |
|------------------------------|-----------|
| Water ... ..                 | 17.41     |
| Total Organic Matters ... .. | 67.21     |
| „ Mineral „ ... ..           | 15.38     |
|                              | 100.00    |

Matters precipitated by Alcohol:—

|                                | Per cent. |
|--------------------------------|-----------|
| Containing { Meat Fibre ... .. | 14.87     |
| 5.78 of the { Albumen ... ..   | 7.60      |
| total 15.38 { Albumose ... ..  | 9.56      |
| of Mineral { Gelatine ... ..   | 8.50      |
| Matters. { Peptones ... ..     | 2.61      |
| Total ... ..                   | 43.14     |

Matters not precipitated by Alcohol:—

|                                     | Per cent. |
|-------------------------------------|-----------|
| Gelatine soluble in Alcohol ... ..  | 0.95      |
| Creatin and Meat Extractives ... .. | 15.79     |
| Mineral Matters ... ..              | 0.60      |
| Non-Nitrogenous Extractives ... ..  | 13.11     |

Total Matters not precipitated by

Alcohol ... .. 39.45

Bovril for Invalids thus shows a total nutrient value of 43.14 per cent., which speaks for itself as to the worth of the preparation. Comparing this Bovril for Invalids with the highest-priced meat food on the market—Valentine's Meat Juice—if two ounces of that preparation be worth 3s., the same quantity of Bovril would be worth 52s.; and *pro rata* for the other preparations, the analyses of which we have given.

These are things the truth of which every chemist can demonstrate for himself. Why, then, should shop shelves be so often loaded with exploded superstitions worse than useless as foods? The worst thing a chemist can do to his customers is to starve them to death by meat extract essences and juice humbugs, when he can with confidence sell a genuine nutritive and stimulating meat food to them like Bovril. A sick person lies trustful and helpless; his relations, eager for his recovery, give him a high-priced food, which they



have been deluded into believing contains the entire nutrient matter of an ox in a few ounces, and the sick one is thrust into the grave from which a word from the enlightened chemist might have saved the victim. Which would be the chemist's better part? Our belief is that it would be to tell his customers the truth about these articles. If it demonstrates that Bovril is the only real food amongst the lot of them, whether it would benefit Bovril that such should be said or not is beside the question. Whether a truth be pleasant or unpleasant, and wherever it leads, it is the duty of the investigator and searcher for truth to follow it. If a better article as a meat food than Bovril appears before the public, the chemist's duty to his customers would be to proclaim its worth and constituents.

### THE PROPOSED SEPTIC SYSTEM OF SEWAGE TREATMENT.

We understand that there is a proposal on the part of the Exeter City Council to deal with the whole of the city's sewage by means of septic tanks and "Cultivation" filter beds, the estimated cost of which, with the land and intercepting sewers, is given as £36,000.

This appears a large expenditure to incur upon the faith of the small and incomplete trials made up to the present time, and it would moreover seem a somewhat rash outlay when it is remembered that the success of the septic system is only based on what has been done experimentally with a few thousand gallons daily of purely domestic sewage only, and not upon an average quality of the sewage of the city.

As the subject is one of no small importance, it is interesting to note that the idea of treatment by putrefactive germs is not new by any means. A patent was taken out as long ago as 1878 by Mr. Walter East for doing what it is now in 1896 proposed shall be done at Exeter, only Mr. East in 1878 wisely made provision in his septic tank for dealing with the offensive emanations which would be given off by the sewage when in a putridinous state.

Mr. Scott Moncrieff, whose system is practically on the same lines as the Exeter septic process, has, we understand from a letter which appeared in *Engineering*, of September 25th, 1896, something to say on the matter of the novelty of the system, and litigation is hinted at in this respect.

It is stated that the septic tank was in use in this country long before the experiments in Exeter were commenced, that in France it has been largely adopted and fully described by M. Mouras, and if anyone deserves the credit of having introduced it into England, it is Messrs. Beazley and Burrows, of Westminster, who for the last seven or eight years have been using it for the drainage of country houses; to put it plainly, and without the glamour of organisms, microbes, and bacteria, which the tyro in sewage treatment delights to introduce as scientific, the septic tank is nothing more than a covered, elongated cesspool, with the submerged inlet and outlet of Messrs. Beazley and Burrows.

There is but little question, therefore, that the idea is not a new one, and it is apparent that the septic tank is only the revival of the covered-in cesspool, and that the septic system consists but of this, with the addition of a plurality of filters upon the modern aerating system, patented and in use by other inventors.

However this may be, the advantage of the septic system, or, more properly speaking, the putridinous system, appears doubtful; at Burton-on-Trent a septic or putrefying treatment of sewage carried on—a few years ago—at the Burton Sewage Farm, resulted in an action being brought against the Burton Corporation by the Rev. Roland Buckson and Mr. L. Mole, who both resided a long distance from the Sewage Farm.

Heavy damages were awarded for the evil smells which polluted the atmosphere. Since the action the

Corporation adopted a chemical treatment, and thereby stopped the nuisance.

The Burton Corporation case should prove an interesting object-lesson, the chief difference between the septic system, as contemplated for Exeter and consummated at Burton, being in favour of Burton, inasmuch as at the latter place the effluvia was diluted by not being allowed to concentrate at one spot, whereas at Exeter it is proposed to concentrate the stink-producing effects of the sewage.

The Exeter septic, or putridinous-promoting system, may be briefly described as a series of covered tanks, in which the sewage is to rot in the tanks, the action of the bacteria being apparently the same as in Messrs. Beazley and Burrows' cesspools.

The putrid sewage from the tanks is then to be passed through filters constructed on the modern aerating principles already referred to.

It was at first asserted that the Exeter system produced no sludge, but at the second small experimental works it has been found necessary to make two sludge chambers at the inlet end of the tank, with convenience for dropping in a sludge pump, so that it is evident that provision will have to be made for sludge pumping and disposal.

The power possessed by certain forms of bacteria to liquefy albuminoid gelatinous substances is well known; and one feels that there is something fascinating in guiding, directing, and making use of this property, but in actual practice it has been found that systems endeavouring to purify sewage by allowing putrefaction to set up, have, when tried on a large scale, failed to give satisfaction.

The liquid from the tank, loaded with putrefactive germs, comes into collision in the filter bed with the nitrifying organisms resident therein, a fierce fight must therefore ensue upon the meeting and mixing up of these rival organisms; the question is which shall survive. If the former should get the upper hand (which of course must be the case at least in the conduits, and upon the surface of the beds), the entire filter bed would become a seething mass of corruption. On the other hand, if only a very small quantity of sewage be allowed to flow on to a sufficient area of filter as to be quite certain that the nitrifying process be not interfered with, then a good effluent may result, as shown by the Massachusetts experiments years ago. There is no patent in this.

If, on the strength of what has been done at the small experiments in Exeter, with a few thousand gallons of purely domestic sewage coming from a residential district only, the Exeter Corporation decide to subject the whole of the city's sewage to a septic treatment, their attention should be called to the fact of the vast difference existing between the sewage experimented with and the sewage of a whole city, which would include liquors from slaughter-houses, tan yards, breweries, manufactories and businesses of various kinds. Any one or more of such liquors would be likely to upset the bacteriological balance, and throw the septic system out of operation.

Consider the effect of the sewage of, say, a population of 40,000, being allowed to get into a putridinous state, and, when in that condition, being turned on to filter beds! The certain result would be that one of the most noxious gases, sulphuretted hydrogen, associated with other gaseous sulphur compounds possessing disgusting odours, would be liberated and carried by the prevailing S. and S.W. breezes into the city and suburbs of Exeter.

Fortunately at the present time of the year the smell at the one small experimental tank at Belle Isle is not sufficient to produce a serious nuisance, but with a volume amounting to hundreds of thousands of gallons daily of sewage in a highly putrid state, liberated from the tanks of decomposing sewage, the fumes would be pestilential beyond endurance.

The stench of sulphuretted hydrogen has already been



detected even at the outlet of the little septic tank by the footpath at Belle Isle, although the flow experimented with is probably not one-fifteenth part of what the entire flow from Exeter would be.

We do not criticise the philosophy of the septic process, and only wish we could see it tested on the average sewage of Exeter, under the supervision of properly qualified persons not interested in booming anybody's patents, so that all feeling of jobbery or scandal hereafter may be avoided.

### FOOD PRESERVATIVES.

IN continuation of its remarks on Food Preservatives the *Birmingham Daily Mail* of Nov. 5 says:—

"We have received from the secretary of the Federation of Grocers' Associations of the United Kingdom the following communication in reference to the articles which we published on Saturday last on the question of preserving food with boracic acid and salicylic acid:—'Everyone acquainted with the preparation of food is aware that boracic acid has been for many years used as a preservative, and, so far as can be traced, there has never been any evidence forthcoming that boracic acid is injurious to health. Therefore the suggestion that it is immediately injurious to health must be almost entirely a matter of theory. Your article suggests that the Select Committee upon Adulteration elected not to adjudicate upon the matter, and, on turning to the report of that committee, I find it stated that the committee had received evidence to the effect that the "use of these antiseptics is not only unobjectionable, but has proved advantageous both to farmers and to sellers;" and if a Select Committee of the House of Commons, with all the facilities which they have for obtaining evidence of the very best possible character, decline to adjudicate, does it not appear to you, Sir, that the Birmingham Health Committee are going rather too far in themselves adjudicating and declaring that they will not permit the use of boracic acid in articles of food sold in the district which comes under their control? Such a preservative as salicylic acid is almost universal in the manufacture of foreign butter. With reference to the latter preservative, a case was heard in London some time ago. It was decided that it was not injurious. The Birmingham Health Committee must be aware of the necessity for using preservatives in this changeable climate of ours, and if the use of such preservatives were to be generally restricted, it would be a most serious thing for the working classes, who would be unable to keep their food for even two days. If the Birmingham Health Committee prohibit the use of this acid in the food sold in their district, it would be a serious thing for the retail tradesmen, who have, in order to supply their customers, the public, to draw their supplies of food from all parts of the world, and, therefore, would be almost unable to prevent goods containing boracic acid from coming into their possession. When found in their

possession, if the Committee brought summonses against them, it would mean that the retail tradesman would be harassed to a most unjust degree by the numerous prosecutions for selling an article in the preparation of which they had nothing whatever to do, and which was simply prohibited by the Health Committee because they had come to a conclusion that boracic acid was injurious when used in food. When the Board of Reference has been appointed, then the subject might be very properly discussed, and a decision come to for the whole of the United Kingdom, but I venture to hope that the Health Committee of Birmingham will not take a parochial view of this question, but, with their usual large-mindedness, will remember that it would be most unjust to put the traders of Birmingham in a different position to that occupied by the traders of any other part of the United Kingdom.'

"Dr. Hill has supplemented the information which he supplied us with for the purpose of our first article on this important subject. He says that early in the year the Birmingham Health Committee began to discuss the question of putting boracic acid in milk, and, as analyst for the city, he was requested to pay special attention to the matter. He made experiments, with the result that he found as much as 70 grains of boracic acid in a gallon of milk. From this and other tests he came to the conclusion that the acid was not put in merely as a preservative, but mainly for the purpose of arresting the sourness which had already set in. The Local Government Board in 1891 reported that 'There is no doubt that boracic acid taken in large quantities would be injurious, but they had not sufficient information to say whether such minute amounts as were generally added as a preservative could be regarded as having that effect. More medical information was wanted before it could be decided whether a process which *prima facie* might be regarded as intended to prevent the loss of valuable food should be prohibited by law.' Since that opinion was formed the highest physiological experts in the world, and some of the most eminent medical men had given it as their opinion after the most careful researches that boracic acid was injurious to health. Boracic acid was a drug which was fatal to low forms of vegetation and insect life. Bacteria belonged to a low form of vegetation, and there was every reason to believe that in destroying the essential microbes in the system it impaired the human constitution. The well-known expert, Mattern, says that eight grains of boracic acid administered daily to dogs made them unwell in a few days. The dogs were attacked with diarrhoea and gave other signs of disturbed digestion. Even fatal results were observed in some instances. Professor Mattern took 30 grains, and was attacked with violent pains in the stomach and had diarrhoea. Professors Förster and Schlenker had shown that eight grains of boracic acid affects the absorption of the nutritive portions of food. Professor Förster further added that small doses of boracic acid were injurious to the digestion. Then, again, Dr.

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Stevenson, an analytical expert attached to the Home Department, bore out the testimony of the local analyst at Enfield, where the magistrates convicted a milk-seller for using boracic acid. The Kensington Vestry some time ago submitted to several medical experts the question whether boracic acid was injurious when persistently taken in daily food. Sir Andrew Clarke declared emphatically that it was not only injurious, but the cause of many incurable diseases. Sir Henry Thomson pronounced it to be an irritant and very harmful to children. Dr. Lander Brunton found that boracic acid was poisonous in large doses, and injurious when added to articles of food. On the other hand there were some medical men who did not hold this opinion, but it was impossible for any authority entrusted with the health of half a million people to sweep away the definite opinion of the highest physiological experts and the most eminent medical men. Dr. Hill's own opinion was that boracic acid was partly responsible for the prevalence of infantile diarrhoea in Birmingham during the summer months. The use of such a preservative as boracic acid first of all was injurious, it enabled milk dealers to sell milk after it had begun to go sour, it tended to destroy the proper cleanliness of dairies, and, furthermore, it was not used honestly. Boracic acid was not of the 'nature, substance and quality' demanded by the person who buys milk, and consequently it constituted an offence under the Food and Drugs Act. These circumstances prompted the Health Committee to take action with regard to milk, and they objected on principle to its use in foods. On the Continent the produce dealers were not allowed to adulterate their foods with boracic acid and salicylic acid. In Germany and France it was a grave offence to put salicylic acid in lager beer for home consumption, but if the beer were coming to England the acid could be added in large quantities. The public authorities could not afford to consider the business conveniences of a few butter traders while the butter they retailed was harmful. A few years ago boracic acid in butter was unheard of. It was simply put in now to enable the butter merchants to hold back their stock and get a higher price for it as fresh butter late in the season. The butter dealers knew their remedy was to convey the butter here by refrigeration. If boracic acid were proclaimed illegal in butter, the large wholesale dealer would get more frequent supplies, and the principal distributors in large towns could erect cold chambers to keep their stock in. The use of boracic acid and other equally harmful preservatives in foods and milk was indisputably a good thing for the farmers and the vendors, but was it beneficial to the consumer? He (Dr. Hill) unhesitatingly declared that the daily taking of a poisonous drug, which was in no way a constituent either of the food or the human system, was injurious. The modern tendency was first of all to destroy one's digestion with the aid of preservatives, and then keep you alive on patent foods which were said not to require digesting. It was like breaking a man's leg in order to supply him with a crutch. The matter was a serious one from a trade point of view for the provision dealers, but it was a much graver matter for the community at large, and as the present preservative system was an undoubted evil it was right it should be stopped."

#### THE FOOD AND DRUGS ACTS IN THE COUNTY OF DURHAM.

DURING the quarter (says Mr. B. Scott-Elder) 128 samples of food and drugs have been submitted to the County Analyst, and I have pleasure in reporting that in only three cases was it necessary to institute proceedings. The rate of adulteration is thus practically reduced to  $2\frac{1}{2}$  per cent., and I need hardly point out that this will compare favourably with any other authority in the country. It may not be generally known that private information of adulteration is often

forwarded to me by gentlemen interested in the working of the Acts in different parts of the county, and these communications are most valuable and helpful, indeed one of the cases detected during the past quarter was the direct result of one of these communications. Anonymous letters also reach me from time to time, but these, of course, are dealt with very cautiously.

Special attention has again been given to the important question of milk supply, and the result, as set forth in the county analyst's schedule, can only be regarded as highly satisfactory. I have personally obtained several samples of new milk already sold and "in course of delivery" to the consumer. Every sample was found to be genuine.

In consequence of a cheese case, which was heard in the local courts recently, a larger number than usual of samples of that commodity have been obtained. They all proved genuine.

Several samples of condensed milk have been obtained during the quarter, and although none of them has been made the subject of proceedings, it appears desirable to place the four following analyses before you to show the very marked variation in the proportion of fat present in the samples:—

|                  | No. 1. | No. 2. | No. 3. | No. 4. |
|------------------|--------|--------|--------|--------|
| Water ... ..     | 22.97  | 25.58  | 31.94  | 26.74  |
| Non-fatty solids | 67.88  | 66.15  | 67.02  | 73.10  |
| Fat ... ..       | 9.15   | 8.27   | 1.04   | .16    |
|                  | 100.00 | 100.00 | 100.00 | 100.00 |

These samples are all of different brands, and bear labels as follows:—

- No. 1. The best unskimmed country milk condensed.
- No. 2. Warranted to be prepared with the best and richest cows' milk, containing the whole of its cream.
- No. 3. Condensed skimmed milk.
- No. 4. This tin contains skimmed milk.

Although the prices of the different brands vary very considerably it appears desirable that the public should know that they are not one and the same article, although they can all be sold under their respective labels as condensed milk without any verbal disclosure of the abstraction of fat being made at the time of purchase.

The Select Committee of the House of Commons on Food Products Adulteration, originally appointed in 1894, have, after very extensive and exhaustive enquiry, presented their report to the House of Commons. Some of the recommendations are very important, and many desirable suggestions are made, but I regret to say that some of the special difficulties which we have experienced in this county are unprovided for. I do not propose to discuss them at present, but if a Bill be introduced, I will not fail to bring the matter under your notice.

#### GINGER BRANDY.

AN analysis at Bath of "a coloured liquid in a sealed bottle," which was one-third of a bottle of ginger brandy, bought by Mr. Montagu for a penny, disclosed 50 parts of water, 49.978 parts of sugar, "with a trace of colour and essence of ginger," and the remainder of tartaric acid. Mr. Gatehouse, the analyst, was of opinion that the same was a sample of "solution of sugar, coloured with caramel, and containing a little essence of ginger and tartaric acid, but no alcohol, and is not of the nature, quality, or substance of brandy." This is sold all over the country by that name by people who vend temperance drinks.

It is curious that teetotalers have such a sneaking regard for the titles of non-teetotal beverages. Witness Kopp's Ale and a host of others.



## AN ENGLISH DINNER.

HERE are a few ingredients of an *English* dinner: Two pounds of *Canadian* rump beefsteak, six *New Zealand* kidneys, four *French* eggs, six or eight *Portuguese* oysters. Having sliced the steak and kidneys up small, place in a pan: to these add, after thawing, an *Australian* wild rabbit cut up, or a *Hungarian* chicken; also a *Spanish* onion or two, with a couple of teaspoonfuls of *Argentine* beef extract. Just cover with water and stew steadily until tender. Turn into a pie dish, taking out the rabbit or chicken bones; when cool, add a good thick crust of the best *American* whites flour, having previously rubbed in sufficient lard, *Chicago* preferred. Before doing so, slice up the hard-boiled eggs, mix in the oysters and season to taste. This served hot, accompanied with vegetables, a few *Canary* potatoes, and a tin of *Italian* tomatoes, will be found a most succulent dish. To follow as pastry, or may be used for side sweets, one of *Californian* tinned peaches, another of dried *Cape* apricots, stewed or soaked, accompanied with a *Tasmanian* apple-pie. After just topping up with a slice of *Dutch* cheese and *Normandy* butter, a thimbleful of schiedam will be found beneficial in making it settle before reposing comfortably for forty winks. So says our contemporary, *The Caterer*, which evidently knows how to point a moral in a telling way.

## A DRUG PROSECUTION IN LIVERPOOL.

EMILY WARHURST, chemist, 5, St. Anne-street, was summoned on November 5, for having used an ingredient in a prescription which was deficient in strength. The manager of the shop made up the prescription on October 12, and the analyst's certificate stated that the prescribed quantity of sodium bromide was 3 drachms in 8 fluid ounces, but the sample only contained 2·33 drachms, and was deficient to the extent of about one-fifth of the quantity prescribed. The analyst's certificate was admitted, but it was stated that the drug deteriorated by keeping. Mr. Stewart remarked that defendant would have to be more careful in future in getting fresh supplies of the drug. A fine of 10s. and costs, and 10s. 6d. for analyst's fee was inflicted.

## COMMON SENSE ABOUT OUR FISHERIES.

It is not often that a Minister in Her Majesty's Government has the common sense or honesty to speak straightforwardly upon a question, and for having done this Mr. Ritchie deserves some praise.

A deputation from the National Sea Fisheries Protection Association waited upon the President of the Board of Trade on November 4, to urge upon him the early re-introduction and passage of the Fisheries Acts Amendment Bill of last Session. Mr. Ritchie, who was accompanied by the Earl of Dudley and Sir Courtenay Boyle, had previously received a private deputation from Lowestoft and Yarmouth, introduced by Mr. H. S. Foster, M.P., which advanced points in opposition to the Bill.—Sir A. Rollit, M.P., introduced the second deputation, which he declared to be thoroughly representative of the sea fishing industry. The fishing industry were grateful to the Government for the introduction of the Bill of last Session, they regretted that circumstances compelled its being dropped, and they now wished to represent the imperative necessity of the re-introduction of the measure early in the coming Session, with a firm determination to pass it into law. The need for further protection, especially in the matter of preventing the capture of immature fish, was, he thought, universally admitted, and our seas were in fact being depleted to the national disadvantage.—Mr. J. Wrench

Towse supported the object of the deputation on behalf of the Fishmongers' Company, and Mr. Jephson (Grimsby) as a practical fisherman of long experience, maintained that the supply of flat fish was rapidly diminishing, owing to the constant destruction of the immature fish.—Mr. Robbins (Hull) earnestly trusted the Government would lose no time in passing legislation which would put a stop to this suicidal policy of landing and selling undersized fish.

Mr. Ritchie, in reply, said it had been his duty in answering the first deputation to point out the enormity of the evil that existed in the destruction of immature fish, an evil which practically amounted to a killing of the goose that laid the golden eggs, and he told that deputation that when an undoubted evil was recognised it was impossible for the Government to ignore it. (Hear, hear.) The duty of finding a remedy for the evil was laid upon them the more emphatically from the fact that many fishing Powers of much smaller dimensions had already adopted legislation of a kind similar to that which the British Government brought forward last Session. The other deputation urged with some apparent force that an endeavour should first be made to bring about an international agreement. The answer to that contention was that the Government ought not to shelter themselves behind a plea for an international agreement when an evil had been recognised which it was their manifest duty to remedy. He thought it very likely indeed that the passing of a Bill by the British Government might help forward the project of an international agreement, and he would take care that the representations in favour of the Bill of last Session were duly considered when the Government came to the consideration of their programme for next Session, in the hope that the measure would pass into law. (Hear, hear.) Meanwhile, pending any action by Parliament, he appealed to steam trawlers in particular, by voluntary act, to do what they could to put a stop to the destruction of immature fish.

The deputation thanked Mr. Ritchie, and withdrew.

As for Mr. H. S. Foster, M.P., the *Westminster Gazette* some time ago gave him all the praise he merits. We suppose Mr. H. S. Foster, M.P., and Mr. H. Marks, M.P., like the cobra or rattlesnake, were created for some useful purpose, but what it may be would baffle the whole of the millions inhabiting the United Kingdom to discover. However, they are M.P.'s, and the House of Commons ought to be proud of them.

## DRUG ADULTERATION.

SARAH BROWN, Clapham, was summoned by Inspector Randerson, at Islepton, for selling him, on October 2nd, four ounces of tincture of rhubarb which was not of the substance and nature demanded; it was destitute of saffron.—The defendant said she sold it as she got it from Waterworth, Preston.—Fined 1s. and costs.—Thames Faraday, Clapham, was also charged with selling three ounces of spirits of nitre, which contained 2 per cent. excess of water, on the same day. Inspector Randerson paid 4d. per oz., and he had never had to pay more than 3d. before. Defendant said he sold it as he got it; he had had it in the shop for four or five years.—Fined 1s. and costs.

## MILK PROSECUTION IN READING.

WM. FRENCH was summoned at Reading, on Nov. 10, for selling milk on Oct. 22 without its containing the proper quantity of fat.—Mr. Millington, Deputy Town Clerk, prosecuted.—John Chowles, assistant in the surveyor's department, said that on the day in question he purchased half a pint of new milk at defendant's shop.—Wm. Henry Robertson, inspector of nuisances, spoke to receiving the milk and dividing it into three parts, one of which he sent to the public analyst. He subsequently received a certificate which showed that the milk contained 2·57 per cent. of fat.—Dr. Ashby explained that the quantity of fat in milk varied during the year. It was higher in the months of October and November than any other period of the year, the fat in milk ranging from three per cent. to 4½ per cent. and even higher.—The defendant, who pleaded not guilty, was fined £1 and £1 0s. 6d. costs.



## BORIC ACID IN MILK.

E. H. FARRINGTON finds that the presence of boric acid in milk increases the acidity of that fluid in a curious manner. On dissolving 0.5 Gm. of boric acid in 500 C.c. of water, it was found that 20 C.c. of the resulting solution required 1 C.c. of one-tenth normal alkali to produce a pink colour with plenolphthalein. When the acid was dissolved in milk, however, in the same proportion, 20 C.c. required the addition of 8 C.c. of the same alkaline solution to produce the pink colour. The water was neutral before the addition of acid, whilst 20 C.c. of the plain milk gave the pink colour with 4 C.c. of the one-tenth normal alkali. In other words, the same amount of boric acid increased the acidity of a given sample of milk four times as much as it did the acidity of the water. No explanation of this fact is offered by the author, but he points out that a simple means is thus afforded of detecting boric acid in milk. The acidity of the prepared milk examined represented 0.36 per cent. of lactic acid, and it is considered that milk which apparently contains over three-tenths per cent. of lactic acid, and yet neither tastes nor smells sour, may safely be regarded as adulterated with some preservative, probably boric acid.—*Journ. Am. Chem. Soc.*, xviii., 847.

## HEAVY ADULTERATION OF SPIRITS AT FAIRS.

THOMAS DAYSON is an innkeeper at Clapham, and was charged at Ingleton, on November 6, with five offences against the Food and Drugs Acts on the day of the Clapham Fair.—Inspector A. Randerson said he purchased a half-pint of gin, a half-pint of rum, a half-pint of brandy, a half-pint of Irish whisky, and a half-pint of Scotch whisky, dividing them into three parts, as usual. Before he could get served he had to produce his authority. The gin was 48.1 per cent. under proof, and contained 20 per cent. excess of water; the rum was 62.7 per cent. under proof, and contained 50.2 per cent. excess of water; the brandy was 43.1 per cent. under proof, and contained 24.1 per cent. excess of water; the Irish whisky was 53.8 per cent. under proof, and contained 38.5 per cent. excess of water; the Scotch whisky was 39 per cent. under proof, and contained 18.7 per cent. excess of water.—Defendant pleaded guilty.—Mr. Tilly, for the defence, said it was Clapham Fair, and he thought some allowance should be made for this fact. His client's son had mixed the liquor, but, of course, Dayson was responsible, and he was very sorry.—Fined £1, and £1 4s. 6d. in each case.

## IMPORTANT HIGH COURT CASE RE MILK IN SCOTLAND.

## HIGH COURT OF JUSTICIARY IN SCOTLAND.

MORTON v. FYFE.

In the Sheriff Court of Lanarkshire, at Glasgow, on May 4 last, Mr. Sheriff Fyfe had before him a complaint under the above Acts, at the instance of Peter Fyfe, Chief Sanitary Inspector, Glasgow, against Andrew Morton, farmer, Inchbelly Farm, Kirkintilloch, in the county of Stirling, under which the latter was charged that, having in pursuance of a contract of sale with William Pitcairn Robley, wholesale and retail dairyman, 92-100, High John-street, Glasgow, and carrying on business there under the name of Hugh Hamilton, forwarded on April 1, 1896, to Robley, eight gallons of sweet milk to the terminus of the tramway rails at 594, Springburn-road, Glasgow, and William Thomas Armstrong, ordinary sanitary inspector or police constable, Glasgow, having, on behalf of the complainer, procured on the said date, at the said terminus of the tramway rails aforesaid, being the place of delivery of the said eight gallons of sweet milk, a sample of the said sweet milk for the purposes of the Food and Drugs Acts, and the said sample on analysis, as prescribed by the said Acts, having been found to contain 14 per cent. or thereby of added water, he, the said respondent (Mr. Andrew Morton) did thus at the said terminus of the tramway rails, No. 594, Springburn-road, aforesaid, time above libelled, within the meaning of Section 3

of the Sale of Food and Drugs Act (Amendment Act), 1879, sell to the said William Thomas Armstrong, for the complainer, to his prejudice, the said sample of sweet milk, the same not being of the nature, substance, and quality demanded, in respect that it contained 14 per cent. or thereby of added water, contrary to the Acts 38 and 39 Vic., cap. 63, section 6, and 42 and 43 Vic., cap. 30, section 3, whereby the respondent for the said offence was liable in a penalty not exceeding £20.

On the same date, and at the same place, samples were also taken of eight gallons of sweet milk, and of another delivery of a similar quantity of sweet milk by Morton to Robley, and these on analysis were found to contain 15 and 17 per cent. or thereby of added water respectively. Charges relating to the latter offences were also made against Morton, who pleaded not guilty.

Before the trial it was objected for Morton that the trial should not proceed on account of the failure of the complainer, or the person employed by him, to offer to divide each of the samples of milk taken into three parts, as he averred was required by Section 14 of the 1875 Act, in order, if required to do so, to deliver one part of each sample to the appellant's servant at the time the samples were taken. The Sheriff repelled the plea, and proceeded with the trial, when, on the facts proved, he convicted the respondent of the offences charged, and adjudged him to forfeit and pay the sum of £4 of penalty for each offence charged, in all £18.

At the trial, no request was made to the Sheriff that any sample should be sent to Somerset House for analysis in terms of Sec. 22 of the Act of 1875.

The respondent asked the Sheriff to state a case for the opinion of the High Court of Justiciary, which request the Sheriff granted, and the question of law submitted for the opinion of the Court of Appeal, was, whether the conviction in question was invalid by reason of the failure of the complainer, or those acting for him, to offer to divide each of the samples of milk in question, taken into three parts, in order, if required to do so, to deliver one part of each sample to the respondent's servant.

In June last, the appeal was heard by the High Court, the judges presiding being the Lord Justice Clerk (Lord Kingsburgh) and Lords Traynor and Moncrieff, and after Counsel had been heard, the Court made *avizandum* with the case.

The vacation having ensued immediately after the hearing, judgment was not pronounced until Monday, November 2nd, when the Court resumed its sittings. On that day the High Court gave its decision, and answered the question of law in the negative, sustained the conviction, and dismissed the appeal, but in the circumstances did not award expenses against the respondent. The following are the opinions of the judges:—

LORD JUSTICE CLERK said:—

"In this case, the appellant, who carries on business as a farmer in Stirlingshire, had a contract by which he had to deliver a quantity of milk to a dairyman in Glasgow. On a certain day, the milk in transit was stopped at the place of delivery, and there the official authorised to do such an act, took a quantity for analysis. It was duly analysed, and was found to be diluted with water and there was a prosecution and conviction.

"The question in the case is whether the conviction is bad in respect that the statutory procedure under the Act of 1875 was not carried out, by which, on taking a sample of that kind, a division should be made into three parts, and one of these parts delivered to the opposite party. The contention on behalf of the authorities is that the Act of 1879 says that proceedings shall be taken, and penalties on conviction be enforced in like manner, in all respects, as if such officer, inspector, or constable had purchased the same from the seller or consignee, under Section 13 of the principal Act, and that this proceeding was not according to the former Act in respect of the non-division of the samples.

"This is an important question, and had it not been one which has already been made matter of decision in the Supreme Courts of the country, I should think one requiring very careful attention. What opinion I might form upon it, I do not say if the question had not already been made the matter of decision. There are cases in England specially deciding the point unfavourably to the view taken by the appellant, and while we are by no means bound to follow these decisions, it is of the greatest possible consequence that the administration of the same law should be uniform in both countries, if possible. I have considered the matter very carefully in this view. Can it be said that these Acts of Parliament cannot be read in the sense of the decision pronounced in the Court below?

"I have come to the conclusion that they can be so read. Having come to that conclusion, and considering that they



have been so read by Courts of equal jurisdiction with ourselves, I think we ought not to disturb the law as thus established, and therefore the proper course is to refuse this appeal."

LORD TRAYNER said:—

"The facts in this case are not in dispute. The appellant, a farmer in Stirlingshire, was under contract to deliver a quantity of milk to a retail dairyman in Glasgow. On April 1 last part of the milk so contracted for reached Glasgow; and while still under the control of the person sent by the appellant in charge thereof, samples of it were taken by an Inspector acting under the powers conferred by the Sale of Food and Drugs Amendment Act, 1879. The inspector did not offer to divide the samples taken by him, or give any part thereof, to the person in charge of the milk as representing the appellant as required by the 14th Section of the Sale of Food and Drugs Act, 1875. His failure to do so is said by the appellant to vitiate the whole proceedings taken against him, and consequently to entitle him to have the conviction which followed set aside. He maintains this on the ground that under the Act first above cited (the Amendment Act) it is provided (Sec. 3) that 'proceedings shall be taken and penalties on conviction be enforced in the like manner in all respects as if such officer, etc., had purchased the same from the seller or consignor under Section 13 of the principal Act,' and that his 'proceedings' here referred to include division of the sample taken in the manner provided in Section 14 of the principal Act. I think there is great force in the appellant's contention, and had the question been quite an open one might have been disposed to give effect to it. But the same question has been more than once subjected to judicial consideration in England, and the judgments pronounced there have been adverse to the appellant. I cannot say that the reasons assigned for these judgments are so conclusive as to command my assent to them, but I would hesitate in respect of the doubts I entertain to pronounce a judgment on the meaning and construction of an Imperial Statute different from that which has already been pronounced in England. I am, therefore, prepared, in deference to the cases cited, to answer the question now put to us in the negative."

LORD MONCRIEFF said:—

"Having regard to the construction of the 3rd Section of the Act of 1879 which has been adopted by the English Courts and the practice which has followed upon these decisions, I agree that we are bound to recognise that construction unless we are clearly satisfied that those decisions are erroneous. Now I confess I have great hesitation in following those decisions, the first of which, *Rouch v. Hall* (L.R., 6 Q.B.D. 17), was decided *ex parte*. The 3rd Section of the Act of 1879 provides that 'After a sample has been taken of the milk the person who takes it shall submit the same to be analysed, and the same shall be analysed, and proceedings shall be taken and penalties on conviction be enforced in like manner in all respects as if such officer, inspector or constable had purchased the same from the seller or consignor under Section 13 of the principal Act,' that is, the Act of 1875. Section 14 of the principal Act 'provides that any person purchasing under Section 13 if he intends to submit the milk to an analyst 'shall after the purchase has been completed forthwith notify to the seller or his agent selling the article his intention to have the same analysed by the public analyst, and shall offer to divide the article into three parts.' Now, without unduly straining the words of Section 3 of the Act of 1879, the direction that 'the same shall be analysed,' and so forth, 'in all respects as if the purchase had been made under Section 13 of the Act of 1875' might be held as including the preliminary steps which are enjoined by Section 14 of the Act of 1875. I do not think that there would be any great difficulty in carrying out in regard to cases covered by Section 3 of the Act of 1879 the directions in Section 14 of the Act of 1875. But at the same time the later enactment, taken literally, relates only to analysis—actual analysis and proceedings following upon analysis. The reasons suggested by the English judges for adopting different procedure with regard to such cases from that enforced in regard to cases falling under the Act of 1875 are possibly correct, and although I am not quite satisfied, I agree with your lordships that, for the sake of uniformity, we should adopt the same construction and sustain the conviction, and dismiss the appeal."

Counsel for the sanitary inspector, Mr. Sheriff Principal Lees and Mr. Salvesen, advocates; Agents, Messrs. Campbell and Smith, S.S.C., Edinburgh; Local Agent, Mr. John Lindsay, writer, assistant clerk of police, Glasgow.

Counsel for respondent, Mr. M'Lennan, advocate, Edinburgh; Agents, Messrs. Gardner and Mill, S.S.C., Edinburgh; Local Agent, Mr. Wm. Rodie, writer, Glasgow.

## THE METHODS OF THE AMERICAN OIL GANG.

"THE Standard Oil Company recently purchased," says the *American Paint, Oil and Drug Review*, "for the sum of \$10,000, from the heirs of the late Terence Slane, two houses and the plots of ground on which they stand, at Williamsburg, a suburb of Brooklyn, N.Y. The Standard Oil Company for years have tried to gain possession of Slane's property. The Works of the Pratt Manufacturing Company, on Kent Avenue, adjoin the houses. About fifteen years ago the management of the works decided to increase their already large plant, the major part of which was opposite a row of frame houses. They purchased at good prices all of this row with the exception of those owned by the late Terence Slane. The latter would not dispose of what he had worked hard for, and what he called home. To incline Slane more to the idea of selling his property, it is alleged, the building of the addition to the plant was begun, with the result that large tanks filled with oil were placed by the side of and in close proximity to one of Slane's houses. He compelled the company to erect high walls about these tanks, so that in case of fire in the works his property would be in a measure protected. Since the addition to the oil works there has been a score of fires, and on many occasions Slane and his family have been rudely awakened at night by loud explosions. Several times their home has rocked as does a ship at sea, but for all that Slane persisted in holding on to his property. When Slane died he made no mention, as far as is known, as to whether his family should sell his property to the Standard Oil Company or not: but after a recent conference it was sold for the sum stated."

## THE CRUSADE AGAINST MARGARINE.

AT Bury, on November 12, Gertrude Dearden, grocer, Union-street, Bury, was summoned for selling to Inspector Cass 1lb. of butter which was not of the substance, nature and quality of the article demanded, the same containing 60 per cent. of fats other than butter, on the 19th ult. The Town Clerk (Mr. J. Haslam) prosecuted, and Mr. T. R. Bertwistle defended. The Town Clerk said he thought he ought at once to say that Gertrude Dearden was the wife of Oswald Dearden, who formerly carried on business at Bury, and who was bankrupt some short time ago. Although the business was now carried on under Gertrude Dearden's name, Oswald Dearden, to all intents and purposes, was, as far as he (the Town Clerk) knew, the responsible person.—Mr. Bertwistle said his friend was not entitled to say that.—The Town Clerk said that, at any rate, Oswald Dearden served the article in this case.—Mr. Bertwistle, for the defence, admitted that the facts, as stated by the Town Clerk, were correct. In the case where a third party had been made to suffer, every penny of the costs incurred by such party had been paid by Dearden. Mrs. Dearden was the real defendant in this case, the shop being hers and run for her benefit. In the article sold there was nothing hurtful as human food. Persons purchasing an article like this for 1s. per pound at a time when butter was 1s. 2d. wholesale price, must know that they could not be getting pure butter. The article in this case cost the defendant 10d. per lb. He pointed out that in the Manchester papers of that morning other defendants, in cases where the percentage of foreign fats was 80 per cent., had been fined only 20s. and costs.—A fine of £10 and costs was imposed.

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Rowland Ellis, 110, High-street, West Norwood.  
J. Everett & Co., Everett's Stores, St. James's-  
street, Walthamstow, E.  
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Wakefield & Sons, 140, High-road, Streatham,  
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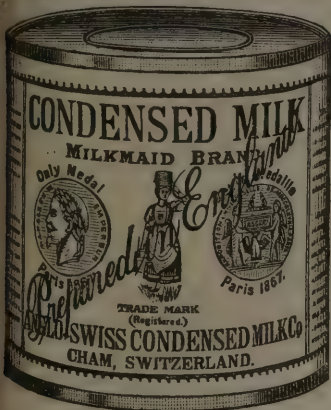
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# Food and Sanitation.

SATURDAY, NOVEMBER 28TH, 1896.

## HOW TO PROLONG LIFE.

As the question of food enters so largely into the subject of long and healthy life, some suggestions seem called for in regard to what may be considered most suitable for persons of sixty and upwards. It has been urged that a return to nature, or to the food which primitive man nourished his body upon, would be the right thing to do. Fruits and nuts appear to have been his dietary, and not flesh and vegetables. Oranges, apples, grapes, figs, bananas, dates, prunes, peaches, and, in fact, all kinds of sweet fruits and tomatoes are good, because they are deficient in nitrogen and free

from the earth salts of other kinds of food. Starchy foods are more difficult to digest than fruits and meats. Nuts, such as almonds, Brazil nuts, filberts, walnuts, hickory nuts, and similar products abound in nourishment and furnish the necessary heat for the body. Eggs, fish, cheese, milk, especially buttermilk, and poultry of all kinds supply variety. Starch foods are clogging to the system, producing constipation. Invalids are always put upon toasted bread, because the heat acting upon the starchy portions turns it into dextrine; this, being changed to glucose by the action of the stomach, is easily disposed of. Glucose is the sugar of nature as found in ripe sweet apples and in honey.

Tea, coffee, wine, and beer, as well as all alcoholic drinks, are to be taken in extreme moderation, as they are mere stimulants and have no nutriment, or, at least, very little. Milk is a better drink. As everyone knows, if you eat slowly, you do not need to drink at all. And that is one of the great advantages of a fruit diet. You get enough of the best quality of water distilled by nature in the fruit, which is also aperient and cooling to the blood, already too much heated by starchy foods. Exclusive vegetarianism seems to be injurious to the human system. But people who advocate a diet of fruit and nuts, omitting starch foods and too much bread, are not vegetarians; for they get the heat and strength necessary for health from nuts, lean meats, lamb, veal, and young animals whose systems have not had time to get clogged with the objectionable earth salts. If fresh fruit cannot be obtained at all times, dried figs, raisins, and dates can be steeped in hot water and thus brought to an almost fresh condition. As for whole meal or Graham bread, the merit that it may have is offset by its irritating effects upon the stomach and intestines, produced by the indigestible bran particles. Sugar furnished by nature in the form of glucose is ready for assimilation; on the contrary, sugar from cane, beets, maple, and sorghum is insoluble by the system until it has undergone the process of digestion, both in the stomach and the intestines. Now, as salt, pepper, and all irritants, as well as stimulants, are goads to the nervous system, the human body, if treated naturally, does not require them. Animal instinct indicates the law of nature. Since Cuvier's time zoologists have been telling us that man belongs to the frugivorous animals. He is allied to the man-like apes, which live entirely on nuts and fruits, never eating other animals or cereals.

Dr. De Lacy Evans, in his book, *How to Prolong Life*, gives over twenty pages to tables of analyses of foods. As compared with the nourishment they give, fruits and nuts have the least proportion of earthy salts. Animal flesh comes next, then vegetables, and fourth in rank we have cereals and pulses, which are shown to have the largest amount of the earthy matters. From the analysis we see that fruits as distinct from vegetables have the least amount of earth salts. We also notice that they are to a great extent free from the oxidised albumens—glutinous and fibrinous substances; and many of them contain acids—citric, tartaric, malic, etc.—which, when taken into the system, act directly upon the blood by increasing its solubility, by thinning it; the process of circulation is more easily carried on and the blood flows more easily in the capillaries—which become lessened in calibre as age advances—than it would if of a thicker nature. These acids lower the temperature of the body and thus prevent the wasting process of oxidation or combustion in the system. Rice is easily digested and an excellent food, except that it abounds in earth salts. Fruits are not only digested in the first stomach, but they have a large part of their nourishment already in a condition to be absorbed and assimilated as soon as eaten. The food elements in bread and cereals have to undergo a process of digestion in the stomach, and then be passed on to the intestines for a still farther chemical change before they



are of use to the human system. This is the great advantage of a diet of lean meats and fruits.

Overwork is not expected from a stomach already jaded, and the nervous wear and tear of the organs of life are avoided. Distilled water should always be used, both for drinking and cooking, if it can be obtained. Rain water, if filtered, is perhaps the next best, though not free from objections. Grapes, say numerous authorities, act very much like mineral waters on the human system. But they are better, because at the same time they nourish the body. Nutrition is increased, secretion promoted, action of the liver, kidneys, and other excretory organs improved, and the phosphoric acid, of which they contain a considerable amount, acts favourably on all the bodily functions, especially on the brain. As is well known, the sugar of the grape requires no digestion, but is taken almost at once into the blood. Dextrine from the grape promotes the secretion of pepsin, and thus favours digestion. Most of the vegetarians eat grapes, though they may prefer pease. Stimulants often assist digestion, but that digestion is best which does not need them.

#### POINTS ABOUT LARD.

"To make lard which will stand up well in summer there are several ways," says the *New York National Provisioner*, "the most natural, or at least most simple, is based upon the proper selection of the stock from which the lard is to be rendered. The melting point of the fat of the swine varies with the part of the body from which it is taken. As a general rule, applying to hogs, as well as cattle, sheep and other animals, the fat taken from near the surface of the body, and especially also taken from the smaller parts of the body which are liable to be more affected by the atmospheric temperature, has a lower melting point than the fat which forms part of the interior of the large parts of the body. In accordance with this rule, the fat from the foot of the swine has a 'hardness' as low as 32° C., while the intestinal fat has a hardness of 44° C. and above. With proper attention to these facts and a careful selection of the stock, leaving aside and for different use the fat of the hog feet and heads, and using principally intestinal, back and kidney fat, a lard can be produced which will 'stand up' nicely, even in warm weather. But frequently it becomes necessary to work up all the softer fats (head and feet) into lard, and a selection of the stock is not possible. The easiest remedy then is to add to the lard sufficient hard stearine (for which oleo stearine has frequently been substituted) to supply to it the required hardness. The addition of lard stearine cannot be called an adulteration of the lard, as it virtually amounts to the same as removing part of the excess of oily component of the lard. Whoever is acquainted with the separation of lard into stearine and lard oil will readily agree with us on this point, and will admit the correctness of our remark and suggestion. Another remedy to give lard more of the desired stiffness is to mix and beat the lard in a mixing machine, thereby working air into the lard, which at once assumes more stiffness. This is, however, a doubtful remedy, though in some cases largely used. There are some preparations, as sodium bicarbonate, borax, etc., which are claimed to have a hardening effect upon lard; sometimes they have the desired effect. If the fat is for any time exposed to a high temperature and pressure while being rendered, the fat is liable to spoil. A continued heating at 40 to 45 lb. pressure is sufficient to ruin a good deal of lard. To reduce the necessity of such heat it is desirable to produce all conditions to allow the stock to be rendered at a low temperature. This can be accomplished by washing and cutting the stock into thin shreds, which will permit the fat to 'try' out readily."

#### THE WATER SUPPLY OF EASTBOURNE.

THE result of a Special Commission of the *British Medical Journal* into the condition of Eastbourne's water supply is not creditable to those responsible for the welfare of the popular health resort. Our contemporary says:—

"Substantially the complaints made are to the effect that for many months past the water supplied to the inhabitants of Eastbourne by the local water company has been so loaded with saline matters as to be undrinkable, and unfit for any domestic use except the flushing of drains. It was pointed out that the nature of the water supply, if not in itself prejudicial to health, had indirectly led to the occurrence of cases of typhoid fever in some parts of the town where people had been driven to use water from polluted sources. It is further contended that the water company has not done its duty by the town, inasmuch as the water 'has gone from bad to worse,' that, although a temporary supply of good water is available, no adequate steps have been taken by the company to supply it to the inhabitants, and that they 'actually refused the offer of the Town Council to distribute this water in the borough water carts free of cost.'

"Our correspondent's communications constitute a very serious indictment. The quality of the water supplies of health resorts is obviously a matter of the utmost importance, and it is now rapidly coming to the front. The public authorities of many of our seaside towns are beginning to find out—by no means too soon—that it has become a matter of necessity to set their districts in order. In view of the important position which Eastbourne has occupied among health resorts and of the great injury that may be done by misunderstanding or misrepresentation upon either side in such a question, we have considered it to be advisable in the public interest to appoint a special commission of investigation for the purpose of obtaining independent evidence. We have caused samples of water to be taken under strict conditions from widely separated points in the town, and also from the temporary supply alluded to by our correspondent, which is known as the 'Holywell' water. We subjoin the analytical reports which we have received upon three samples of water: No. 1, taken at a cottage at Meads, Eastbourne, on October 8; No. 2, taken at a private house in the Upperton district, Eastbourne, on the same date; and No. 3—'Holywell' water—taken from a standpipe near St. Anne's-road, Eastbourne, on October 29.

"From the analytical results it will be seen that water of the same character and composition was being delivered on October 8 at widely distant points in the town, and that this water, while free from organic impurity, was so loaded with saline matters as to be 'absolutely unfit for drinking and domestic purposes and for public supply.' The water contained some 410 parts of total solid matters in 100,000 parts of water, an amount more than 16 times as great as that often present in the London Thames waters when these are in tolerable condition; 188 parts of chlorine as chlorides, which, if calculated into chloride of sodium, for instance, would give 310 parts of the latter; 67.2 of lime, 14.92 of magnesia and 24.31 of sulphuric acid as sulphates per 100,000. It is altogether intolerable that such a solution should be supplied for drinking and domestic purposes in a civilised community.

"The statements made as to the purity of the 'Holywell' water are borne out by the analysis, and it is astonishing that if this water is to be obtained in sufficient quantity it has not been laid on properly for public supply, and is only to be got from standpipes. It is perhaps hardly necessary to refer further to the remarks of Mr. Charles Roberts in the *British Medical Journal*, of October 3rd. In view of the figures given, it is of no advantage to enter into speculations as to the manner in which the mineral constituents are likely to be combined in the water. Generally speaking, con-



clusions as to the actual combination of the constituents are speculative, and therefore very uncertain. Mr. Roberts does not appear to have had this in mind; but in any case the matter is unimportant, for the sufficient reason that people do not want to take their medicine in their drinking water. The analyses of the samples of water referred to were carried out by Mr. Cassal, and the reports we have received are subjoined:—

“Report on the Analysis of Two Samples of Water marked ‘Eastbourne, No. 1,’ and ‘Eastbourne, No. 2.’

“I certify that I have analysed the two samples of

“Report on the Analysis of a Sample of Water marked ‘Eastbourne, No. 3.’

“I certify that I have analysed the sample of water above referred to, and that the results of my analysis were as stated in the appended Analytical Report. These results show that the water represented by the sample was of a high degree of organic purity, and that no objection can be taken to it in regard to the quantities or character of its mineral constituents. The results afford no evidence of contamination.—(Signed) CHARLES E. CASSAL, F.I.C.”

ANALYTICAL REPORT NO. I.—Report on the Analysis of Two Samples of Water marked “Eastbourne No. 1” and “Eastbourne No. 2.”

|                                                                                                          |     |     |     |                                           |     |     |                                            |
|----------------------------------------------------------------------------------------------------------|-----|-----|-----|-------------------------------------------|-----|-----|--------------------------------------------|
| Name of sample                                                                                           | ... | ... | ... | “Easbourne No. 1”                         | ... | ... | “Eastbourne No. 2.”                        |
| Appearance in 2-foot tube                                                                                | ... | ... | ... | Fairly clear; slight yellowish green tint | ... | ... | Fairly clear; slight yellowish green tint. |
| Reaction                                                                                                 | ... | ... | ... | Neutral                                   | ... | ... | Neutral.                                   |
| Total solid matters                                                                                      | ... | ... | ... | 408.8                                     | ... | ... | 411.2 parts per 100,000.                   |
| Total hardness                                                                                           | ... | ... | ... | 120.0                                     | ... | ... | 120.0    ”    ”                            |
| Permanent hardness                                                                                       | ... | ... | ... | 105.0                                     | ... | ... | 105.0    ”    ”                            |
| Temporary hardness                                                                                       | ... | ... | ... | 15.0                                      | ... | ... | 15.0    ”    ”                             |
| Chlorine as chlorides                                                                                    | ... | ... | ... | 188.0                                     | ... | ... | 188.0    ”    ”                            |
| (=Chloride of sodium)                                                                                    | ... | ... | ... | 309.82                                    | ... | ... | 309.82    ”    ”                           |
| Nitrogen as nitrates                                                                                     | ... | ... | ... | 0.58                                      | ... | ... | 0.58    ”    ”                             |
| Oxygen absorbed from permanganate, 30° C., 4 hours                                                       | ... | ... | ... | 0.431                                     | ... | ... | 0.477 parts per 1,000,000.                 |
| Saline ammonia                                                                                           | ... | ... | ... | 0.006                                     | ... | ... | 0.006    ”    ”                            |
| Organic ammonia                                                                                          | ... | ... | ... | 0.042                                     | ... | ... | 0.042    ”    ”                            |
| Appearance of solids on ignition                                                                         | ... | ... | ... | Very faint browning                       | ... | ... | Very faint browning.                       |
| Lead, copper, and iron                                                                                   | ... | ... | ... | Absent                                    | ... | ... | Absent.                                    |
| Lime (CaO)                                                                                               | ... | ... | ... | 67.2                                      | ... | ... | 66.9 parts per 100,000.                    |
| Magnesia (MgO)                                                                                           | ... | ... | ... | 14.92                                     | ... | ... | 14.77    ”    ”                            |
| Sulphuric acid as sulphates (SO <sub>3</sub> )                                                           | ... | ... | ... | 24.31                                     | ... | ... | 24.17    ”    ”                            |
| Microscopic examination: A little mineral matter and a little flocculent vegetable matter in both cases. |     |     |     |                                           |     |     |                                            |
| (Signed) CHARLES E. CASSAL, F.I.C.                                                                       |     |     |     |                                           |     |     |                                            |

ANALYTICAL REPORT NO. II.—Report on the Analysis of a Sample of Water marked “Eastbourne No. 3, Holywell Water,” taken from standpipe at junction of Enys Road Lane and St. Anne’s Road, Eastbourne, October 29, 1896.

|                                                    |     |     |     |                                     |
|----------------------------------------------------|-----|-----|-----|-------------------------------------|
| Name of sample                                     | ... | ... | ... | “Eastbourne No. 3, Holywell Water.” |
| Appearance in 2-foot tube                          | ... | ... | ... | Fairly clear; slight greenish tint. |
| Reaction                                           | ... | ... | ... | Neutral.                            |
| Total solid matters                                | ... | ... | ... | 39.6 parts per 100,000.             |
| Total hardness                                     | ... | ... | ... | 20.0    ”    ”                      |
| Permanent hardness                                 | ... | ... | ... | 5.6    ”    ”                       |
| Temporary hardness                                 | ... | ... | ... | 14.4    ”    ”                      |
| Chlorine as chlorides                              | ... | ... | ... | 4.9    ”    ”                       |
| (=Chloride of sodium)                              | ... | ... | ... | 8.07    ”    ”                      |
| Nitrogen as nitrates                               | ... | ... | ... | 0.466    ”    ”                     |
| Oxygen absorbed from permanganate, 30° C., 4 hours | ... | ... | ... | 0.5.3 parts per 1,000,000.          |
| Saline ammonia                                     | ... | ... | ... | 0.014    ”    ”                     |
| Organic ammonia                                    | ... | ... | ... | 0.024    ”    ”                     |
| Appearance of solids on ignition                   | ... | ... | ... | No perceptible browning.            |
| Lead, copper, and iron                             | ... | ... | ... | Absent.                             |
| Nitrites                                           | ... | ... | ... | Absent.                             |
| Phosphates                                         | ... | ... | ... | Very faint traces.                  |
| Lime                                               | ... | ... | ... | Very moderate.                      |
| Sulphates                                          | ... | ... | ... | Very slight.                        |
| Microscopic examination: A little mineral matter.  |     |     |     |                                     |
| (Signed) CHARLES E. CASSAL, F.I.C.                 |     |     |     |                                     |

It remains for those responsible for this state of things to remedy them at once, or be prepared to see Eastbourne lose its popularity.

water above referred to, and that the results of my analyses were as stated in the appended Analytical Report. These results show that the two samples were identical in character and composition, and that the water represented by them was free from organic pollution, but was heavily charged with saline matters. A water containing such quantities of total solid matter, of chlorides, of lime, magnesia, and sulphates, is absolutely unfit for drinking and domestic purposes, and for public supply.—(Signed) CHAS. E. CASSAL, F.I.C.

A WELL-MERITED TRIBUTE.

DR. J. R. KAYE, who some time ago was appointed Medical Officer of Health for the West Riding County Council, has been presented by his friends in Huddersfield with a case of fish and fruit knives and forks. On the back of the case is the following inscription on a silver shield:—“To Dr. Jas. R. Kaye, M.O.H., from his brother officers, on his appointment as M.O. of the W.R.C.C.”



## EXCESS WATER IN BUTTER CASES AT MANCHESTER.

IMPORTANT DECISION *re* WARRANTIES.

AT Manchester, on November 20, Mr. F. J. Headlam (Stipendiary) gave his decision in a case of Robert Stewart Derbyshire, trading as George Barclay and Co., butter merchants, Hanging Ditch, Manchester, who was summoned by the Corporation under the Food and Drugs Act, for having given a false warranty with butter, two samples of which on analysis were found to contain 23 and 21 per cent. of water respectively. The proceedings originated with a summons against Martin Hopkins, provision dealer, St. Andrew's - street, who pleaded that the butter had been supplied with a written guarantee by Mr. Derbyshire, and the summons against Hopkins was dismissed.—Mr. Hockin, who represented Mr. Derbyshire, pleaded that his client had received a warranty from the dealer in Ireland, by whom the butter had been supplied in the first place, and argued that it was only reasonable that the wholesale dealer should, like the retail dealer, be able to shelter himself behind the warranty, and he further contended that his client was not liable to a penalty unless a false warranty was given knowingly and with intent to defraud. The whole question, he contended, was a question of intent. Moreover, he said, in the Act it stated that a certain procedure should be adopted, such as the demanding of samples by the prosecutor from the defendant, which had not been done in this case.—Mr. Hudson, in support of the prosecution, submitted that it was not necessary for it to be shown that the defendant had knowingly given a false warranty, because in that section of the Act under which the prosecution was taken the word "wilfully" did not appear. Nor could the defendant in this case plead that he had himself received a warranty, as the exemption did not apply to him.

Mr. Headlam, in giving his decision, said he thought the defendant was liable. It was proved in the former case Hopkins sold butter which was adulterated, and he had a warranty from the present defendant. The question then arose whether, Hopkins being excused, the same privilege could be claimed by Mr. Derbyshire. He held that it could not. In all the sub-sections of Section 27 the word "wilfully" occurred, except in the one which related to the giving of a false warranty. If the Legislature had intended the defendants to be absolved they would have put the word "wilfully" into that particular section, as well as the others. Section 25, to the effect that if the defendant in any prosecution proved to the satisfaction of the justices or court that he had purchased the article in question as the same in nature, substance, and quality as that demanded, and so on, only had reference to the selling of the article. He understood, however, that whatever view he took of the case, would go to a higher court. He imposed a penalty of £5 and costs.

Mr. Hockin: You decide against us then, both as regards the point relating to giving a false warranty, and that regarding the obtaining of samples and the like from the present defendant?

Mr. Headlam: Yes.

Mr. Hockin again pointed out the hardships that would be put upon the shoulders of a certain class of traders in such a case.

Mr. Brierley, barrister, asked if the decision applied to all the summonses which had been issued against other parties.

Mr. Hockin: May I ask your worship to state a case?

Mr. Headlam: If you want a case stated you had better give further evidence.

Mr. Hockin: Evidence has been given.

Mr. Rylands, who appeared for Von Straughton and Zoon, asked the Stipendiary if a case was being stated, not to inflict any further penalties until after the hearing of the appeal.

The Magistrates' Clerk: The bench have not heard your case.

Mr. Rylands: The case against my clients is exactly the same as that of Mr. Hockin's—at least, the same points are involved.

The Magistrates' Clerk: What are you prepared to do, Mr. Hudson?

Mr. Hudson said he was prepared to accept the same penalty in each case as in the case which had just been decided. If further evidence was necessary, he was prepared to go into it.

Mr. Rylands asked for an adjournment of the cases until the appeal had been heard. They could come to court at any time when asked to do so.

Mr. Hudson: My objection to that is that the witnesses are now all present, and are ready to proceed.

The Magistrates' Clerk: There are two summonses against Mr. Derbyshire. Does the penalty apply to both cases?

Mr. Hockin pointed out that it was decided to take the summonses together.

Mr. Headlam, on the application of Mr. Hudson, said that the penalty referred to the summons relating to that which contained the highest percentage of water.

A case was granted for the higher court, and the hearing of other summonses was adjourned, until the decision there has been given.

## ADULTERATED MILK.

## TRACING THE TRUE OFFENDER.

AT Birmingham, on November 20, Henry Wardall, 113, Tower-street, was summoned for selling adulterated milk. Milk, purchased at the defendant's shop on October 14th, was found on analysis to contain 14 per cent. of water more than natural. Defendant pleaded that he sold the milk in the same state as he received it from Messrs. Fairbrother, of Summer-lane. The Bench decided to convict, but withheld sentence until the hearing of several other cases.—Joseph James Mason, of 36, Tower-street, was summoned for selling a half-pint of milk on October 14, which contained 13 per cent. of added water. Defendant said that he sold the milk in the same state as he received it from Messrs. Fairbrother. The Bench decided to convict, but withheld sentence.—William Fairbrother, 325, Summer-lane, was summoned for selling milk containing 14 per cent. of added water. Inspector Jones purchased half a pint of milk from Fairbrother's prior to taking the samples at the other two places. Defendant stated that he had the milk from J. E. Scarratt, Elmhurst Farm, Lichfield, and that it was supplied to him as new and pure milk. Defendant, however, did not get a guarantee at the time, but since the sample was taken has been given a guarantee note. The Bench decided to convict, but withheld sentence.—Scarratt then appeared to answer two summonses. He was defended by Mr. Barnes, of Lichfield. Mr. Hiley said that on the 2nd inst. Inspector Jones met the 10 a.m. train from Lichfield, and took samples of milk from three churns consigned by defendant to Messrs. Fairbrother. One sample was right, but the two others were returned as containing 47 and 32 per cent. of added water respectively. He thought it was the worst case the Health Committee had ever brought before the Court. Jones deposed to taking the samples, and produced Dr. Hill's certificates, and Mr. Fairbrother stated that he began to have the milk in April, and defendant contracted verbally to supply pure milk. He had complained to the defendant on one occasion of the milk being a little poor. Defendant said that about a fortnight ago young Fairbrother told him they had been summoned for selling adulterated milk, and asked for a guarantee, which he at once gave. Witness intended the guarantee to be retrospective. Witness was away at the time the milk was supplied.



He denied that the quality of the milk had ever been complained about. Mr. Barnes then called all the defendant's servants who attended to the milk until it was delivered at Lichfield station, and they all swore that it was not tampered with. The magistrates fined Wardell and Mason 1s. each without costs, but ordered Fairbrother to pay 40s. and costs, or a month, considering that he had been palpably negligent in failing to obtain a guarantee. They considered Scarratt's case one of the most serious that had been brought before the Court. The magistrates regretted that they felt that in many cases the small dealers had been the victims of the wholesale dealer, as represented by the defendant that morning. Defendant had had every opportunity of vindicating these charges; but there was nothing which had been stated that lessened the offence for which he had been summoned that morning. Fairbrother had 250 customers on the books, and every one of those customers might have been made responsible for the adulteration of the milk which had been detected in this one case. The Bench would, therefore, be wanting in their duty if they did not make a severe example in the one case that the health officers had been successful in tracing and bringing to account. They had decided in the first case, where the larger amount of adulteration had been proved, to fine defendant £20 and costs, or two months' imprisonment, and in the other defendant would have to pay the costs.

#### KENT AND ADULTERATION.

THE County Analyst examined 328 samples during the past quarter, of which 37 were found to be adulterated. Of these 34 consisted of samples of food, and the remaining three of spirits of nitrous ether. Of 60 samples of milk analysed 17 were found to be adulterated. In two cases in which legal proceedings were taken and the complaint dismissed, the Committee thought it advisable to ask that a case should be stated for the opinion of the High Court. The first was a case in which a grocer was charged before the justices of the Cranbrook Division with selling as beeswax a compound largely adulterated with paraffin, and the justices dismissed the summons upon the ground that beeswax is not a drug. The High Court held that under the circumstances of the case there was evidence upon which the justices might find, as a fact, that beeswax was not sold as a drug, and the decision was upheld. This decision would not govern the case of a chemist selling certain kinds of beeswax as an ingredient in or vehicle for drugs, and samples of such beeswax should be taken by the inspectors for analysis as heretofore. In the other case, the justices of the Dartford Division dismissed a summons against a man charged with selling adulterated milk upon the ground that the certificate of the analyst was bad in form. A case was asked for, and is now being proceeded with. A certificate in very similar form has been recently held to be good by the High Court. The committee recommended that Superintendent John Sharpe should be appointed inspector under the Food and Drugs Act in the Dartford District in the place of Superintendent Webster, who has retired.

No samples had been before the District Analyst for examination during the past quarter.

The committee recommended that the order for the County Analyst's re-appointment, which was to be made at that meeting, should set forth the terms and emoluments now attaching to the office, namely, that he be paid an annual salary or retaining fee of £200, a fee of 6s. for every sample analysed, and the following allowances for attendances at Courts to give evidence in proceedings taken to enforce the provisions of the Food and Drugs Act, namely: If within three miles of his place of abode, £1 1s.; if exceeding three miles and not exceeding ten,

£2 2s.; and if exceeding ten miles, £3 3s. each day; with first-class travelling expenses in addition.

#### HANTS COUNTY COUNCIL AND FOOD ADULTERATION.

ON the report from the General Purposes Committee with reference to prosecutions for adulteration of various articles of food, Admiral Field protested against what he called certain "silly prosecutions" at Portsmouth with reference to alleged adulteration of cocoa; but in the discussion which followed several members expressed the hope that those who carried out their duties under the Food and Drugs Act would not relax their efforts, and would endeavour to prevent in every way the adulteration of every kind of food (applause). Mr. A. Jeffreys, M.P., remarked that the Royal Commission, of which he was a member, found that the reference to any one analyst was unsatisfactory, and they proposed to establish a board of reference whose decision in vexed questions of adulteration should be final. With reference to the question of cocoa, raised by Alderman Field, all that could be said was that if the article sold was "cocoa mixture" it should be labelled such, and not "pure cocoa," which it was not.

#### AN IMPORTANT SPIRIT LABELLING CASE.

AT the Middlesex Sessions, on November 21, before Mr. R. D. M. Littler, Q.C., and a full Court, the appeal of *Smith v. Tyler* (county inspector under the Food and Drugs Act) was heard.—Mr. J. P. Grain was for the appellant, and Mr. Bodkin for the respondent.—The appellant, A. J. Smith, is the owner of wine and spirit stores at the Broadway, Ealing, at Hammersmith, and elsewhere. The respondent, Tyler, through his assistant, purchased a bottle of "London Gin," which, on analysis, was found to be 40 per cent. below proof, adulterated with water. The seller contended that the label "London Gin, 40 per cent. under proof," protected him, and was a disclosure to the purchaser in compliance with the Food and Drugs Act. The Brentford justices convicted him, and he now appealed. Mr. Grain argued that the case was governed by that of *Platt v. Tyler*, wherein the late Chief Justice Coleridge and Lord Justice Day held that a label disclosing that a certain brand of condensed milk was skimmed milk was sufficient notice to the purchaser, even though the tin was wrapped up when handed to the purchaser. Mr. Bodkin urged that in "*Platt v. Tyler*" the label was in large type, easily readable. In the present case the label "London Gin" was not of itself a sufficient intimation of the nature of the spirit sold. In support of this he cited "*Collett v. Walker*." He contended further that the intimation of the reduction to 40 per cent. under proof was so small as not to be easily distinguishable by the purchaser. The judgment in "*Platt v. Tyler*" he considered wrong in law. The Court dismissed the appeal. The Chairman said that in "*Platt v. Tyler*" the words notifying the nature of the condensed milk were in the biggest type; in the present case they were the smallest. No one would be likely to see them, and therefore there could be no disclosure to the purchaser. The label was not distinguishable or legibly printed, not within the terms of the law, perhaps, but certainly not within common sense. The question was one of fact. Mr. Grain notified that he should appeal.

#### A LINSEED MEAL APPEAL.

IN the Queen's Bench Division, Dublin, last week (before Mr. Justice O'Brien, Mr. Justice Johnson, and Mr. Justice Gibson), the hearing of the arguments in



the case of M'Cann, appellant, Conroy, respondent, was resumed and concluded. It came before the court on a case stated by the magistrates at petty sessions at Killeshandra, County Cavan. The question in the case involved the rights of grocers to sell, and millers to manufacture, a certain quality of linseed meal. The summons was brought by Acting-Sergeant Conroy against Mr. Thomas M'Cann, a grocer in the town of Killeshandra, for selling a drug, namely, linseed meal, which was not up to the required standard, and which was not the article which the purchaser intended to purchase. The prosecution was under the Food and Drugs Act, under which the sergeant was an inspector. The magistrates convicted the appellant for selling as a drug a debased article. It was contended on behalf of the appellant that the article he sold was sold as a cattle food and not as a drug, and that the purchaser should have indicated to the vendor the nature of the article he wanted. On behalf of the prosecution it was contended that when Sergeant Conroy purchased the article he took only a sample—a small quantity—and that he intimated to the vendor that he intended it for analysis, and that, therefore, the seller should have assumed that it was a drug he required.

The Court held that the conviction was bad, and that the magistrates were wrong. Mr. Justice O'Brien, in delivering the judgment of the court, said there were several things kept to be used as medicines which are not drugs, and that the primary object must be medicinal.

Mr. Justice Johnson concurred, and

Mr. Justice Gibson said that a drug was anything that was ordinarily used as medicine, and, in this case, as the purchaser did not indicate the exact article he wanted, the prosecution could not succeed.

Mr. Drummond, Q.C., and Mr. P. Law Smith (instructed by Mr. Louis Smith, Cavan) appeared for the appellant. Mr. Morphy (instructed by Sir Patrick Coll, C.B.) appeared for the respondent.

In this case, Sir Chas. A. Cameron had certified that the linseed meal contained 15 per cent. of foreign farinaceous matter and only 8.96 per cent. of oil.

#### DILUTED WHISKY AND THE NOTICE QUESTION.

THE Inspector under the Foods and Drugs Act to the Monmouthshire County Council prosecuted at Newport, on November 21, two publicans at Risca and two publicans at Machen, who were alleged to have sold adulterated whisky. Mr. Stafford Gustard, clerk to the Council, supported the cases against the innkeepers, and Mr. Hornby, solicitor, defended William Hayes, landlord of the Exchange, Risca, whose case was taken first. It was shown that defendant sold a half-pint of whisky to Mr. Sargeant, the inspector, which, on analysis, was found to be 28.42 degrees below proof, or 3.42 below the limit (25 degrees) allowed by Sec. 6 of the Amending Act. Mr. Hornby questioned the inspector that these three degrees below the limit did not constitute a very terrible dilution. To this the inspector replied that 25 degrees under proof was very low, and that where good stuff was sold the strength was much higher than the 25 degrees limit. A framed notice affixed in the bar that to comply with the Act the spirits were of no guaranteed alcoholic strength, was put in by Mr. Hornby, but Mr. Gustard pointed out that notice or no notice the question for the magistrates was whether the sale was to the prejudice of the purchaser.—The Bench decided to fine Hayes 20s. and costs, including analyst's fee.—D. T. Phillips, landlord of the Albert Inn, Risca, whose wife sold the inspector whisky of 29.54 degrees under proof, was fined 20s. and costs.—Francis Morgan, landlord of the Crown, Machen, was fined 40s. and costs, the whisky being 42.06 degrees

under proof.—Frank Thomas, of the Tredegar Arms, Machen, whose whisky was no less than 54.21 degrees under proof, was fined £5 and costs.—Mr. Gustard said this was the worst case which had come under notice. In the three latter cases notices placed in the bar were produced by the defendants, but the inspector and his assistant declared that they did not see such a notice, although they took every reasonable means to discover it.

#### IRON IN VINEGAR.

AT Swansea, on November 19, Mary Roberts, of 17, Dynevor-place, was summoned for selling adulterated vinegar. Mr. Jevons (deputy Town Clerk) prosecuted, and Mr. Viner Leeder defended. The analysis of Mr. Seyler and Mr. Charles showed that the vinegar contained 15 grains of iron in solution, a thing previously unknown. Mr. Emmanuel Thomas, the manufacturer, said the only way he could account for the presence of the iron was that it must have been in the water. The Bench decided that the iron must have accidentally got into the vinegar, and they dismissed the case.

#### ADULTERATED OATMEAL.

JOHN MAYN, grocer, etc., of Cromford-road, Langley Mill, was summoned, at Hearn Petty Sessions, by Captain Sandys, for selling adulterated oatmeal on the 15th October. Defendant's wife appeared. Captain Sandys said the oatmeal contained, according to the analyst's report, 12 per cent. of barley meal. He did not wish to impute that defendant had tampered with it, but he had no warranty with the article. Inspector Hewitt spoke to purchasing half-a-pound of oatmeal. Defendant stated that the oatmeal was purchased from a firm in Nottingham. They had no idea that it was not pure. The chairman remarked that this was a case which ought to be dealt with against the manufacturers, but they would take a lenient view. Defendant was fined 6d., and 2s. costs. Mr. Smith, during the hearing of the case, retired from the Bench.

#### DURHAM AND ADULTERATION.

AN unusually satisfactory report from Mr. Scott Elder was presented to the County Council at its last week's meeting. It has taken years of vigilant supervision to bring things to such a gratifying condition as that, out of 128 samples of food and drugs analysed, in only three cases was it found necessary to set the law in motion. Again, in the very important article of milk, in not a single instance had adulteration been detected. There is, however, a set-off to this with respect to certain samples of condensed milk, which came badly out of the analyst's hands.

#### PARAFFIN WAX IN CONFECTIONERY.

HANNAH RILEY, shopkeeper, 2, Alma-street, was summoned at Aston, on Nov. 23, by Benjamin Bolt, inspector under the Food and Drugs Act, for selling 1lb. of sweets, called "macaroons," containing 3½ per cent. of paraffin wax. Bolt visited defendant's shop and purchased a pound of the "macaroons" for 10d., and, on submitting them to the county analyst, it was found that they contained paraffin wax.—Mr. Cochrane, who defended, explained that wax was not used as a preservative, but for the purpose of giving the children who bought them something to hold which was not sticky. In fact, the wax was more expensive than the



sweets. Paraffin wax, if taken in large quantities, would no doubt be injurious to health, but only a very small quantity was used in the manufacture of the sweets. Since the prosecutions in Birmingham the use of the wax had been discontinued; in fact, the sweets themselves had been withdrawn from sale.—Under the circumstances, Mr. Hill thought the justice of the case would be met by the payment of costs, 6s. 6d.

#### "COTTAGE SANITATION IN RURAL DISTRICTS."

THE Royal Agricultural Society of England have issued a second edition of their illustrated pamphlet on *Cottage Sanitation in Rural Districts*. The work, which originally appeared in the Society's Journal, Vol. III., Part IV., 1892, was written by Dr. H. Maclean Wilson, M.D., B.Sc., under the supervision of Mr. T. Pridgin Teale, F.R.S., and Dr. Spottiswoode Cameron, with the assistance of other well-known sanitary experts. The aim of the paper, as stated in Mr. Teale's preface to the First Edition, is to "make suggestions of as simple a kind as will meet the necessity of each case, and to set forth a minimum of sanitary requirement such as may reasonably be attained in every country village." The new edition has been thoroughly revised by the author, Dr. Maclean Wilson, with the aid and counsel of the same gentlemen who assisted in the production of the original essay, and it includes the changes and improvements suggested by the most recent experience. It deals with the sanitary defects of rural cottages, with appropriate remedies under the heads of the situation, construction and condition of the house; the disposal of all kinds of house refuse; the water supply, including spring water, surface water, wells, rain-water, and the treatment of impure water; and the habits of the inmates, such as inattention to personal cleanliness, discomfort from clothes-washing, over-crowding, and the storage of food, etc. The pamphlet can be obtained at the office of the Society, at 13, Hanover-square, at the rate of 12s. 6d. per 100, 2s. per dozen, or 3d. for a single copy.

#### MODERN ART.

A good story is going the rounds anent Sir E. Burne-Jones and his style of painting. Unkindest cut of all, it is said to have been started by a rival *poseur*. It is alleged that once when Sir E. Burne-Jones was sketching from nature, a cow who was looking on felt so powerfully moved that he found words for his thoughts saying:—"Lookahere: lemon-coloured rocks, pink stone walls, purple trees, and calico skies are matters concerning you and your conscience, but—if you don't stop painting in my calf nile-green, there'll be simply a flat tone left of an interesting but wayward young man. Do you tumble?"

#### FRENCH FOODS.

EVERYONE in Paris knows to-day that spring chickens are manufactured in quantities to order, just the same as artificial snails. Our lobsters and crabs are genuine, but who can ever tell whether they are fresh, dressed as they are in sour wine *mayonnaise*? One must have famously good viscera to swallow the latter. French cheese has very advanced—or, let us say, strong—opinions. Gentle reader, did you ever dream the tender "*Brie*" is now made of petroleum jelly, *alias* vaseline?

#### EARTHENWARE WICK FOR PETROLEUM LAMPS.

A PATENTED wick is prepared by mixing powdered asbestos and sawdust (fine) forming into a mould and heating at 1,000° C. Such wicks yield a very bright

flame, free from offensive odours, and naturally do not char. A saving of about 20 per cent. is obtainable. It is necessary to employ a specially constructed lamp, with specially refined Scotch oil.

#### HYGIENE.

["THANKS to the victorious microbe, it looks as if we shall soon have to give up eating and drinking altogether. . . . Another sanitarian, however, declares that it is not the microbe so much as the weather that kills—the death-rate and the thermometer go up together."]

I cannot eat but little meat,  
By microbes it is spoiled;  
And sure I think I cannot drink,  
Save water that is boiled;  
And I'll endure low temperature,  
Since by the doctors told  
That, to live long and keep us strong,  
'Tis better to be cold.

So let bacteria scourge and scare,  
With ailments manifold,  
To do us good we'll eat no food,  
And keep our bodies cold.

I love no roast except dry toast,  
And that at stated terms,  
A little bread I eat, in dread  
Of pathogenic germs;  
Of milk no whit I take, lest it  
Zymotic ills enfold,  
And fevers breed; yet most I heed  
To keep my body cold.

A keen East wind I never mind,  
And fifty Fahrenheit  
Is the degree that best suits me,  
By day and eke by night;  
Thus wise I strive to keep alive,  
And haply to grow old,  
With beef uncarved, athirst and starved,  
And perished with the cold.

So let bacteria, etc.

—*St. James's Gazette*.

#### UNFERMENTED WINE.

PROFESSOR MÜLLER, of Torgau, in Switzerland, has applied the principle of Pasteur's treatment of wine for the preservation of grape juice and other fruit juices without fermentation. He finds that when the freshly-expressed juice is heated in bottles to a temperature of from 60° to 70° C. for fifteen minutes the yeast cells and other fermenting agents are rendered inactive. The juice can then be kept in well-closed bottles for several years without fermenting. To obtain the juice clear, it must, however, be filtered, an operation which is easily carried out, as the heating will have coagulated the mucilaginous substances causing turbidity. Filtration may be carried out immediately after heating the juice, or after some time, but in any case the filtered juice must be again heated in bottles to the same temperature originally applied, and then it will keep clear in well-closed bottles for several years. Some grape juice bottled in this manner in 1882 is still sound and unfermented. A Swiss company has been formed to manufacture unfermented grape and fruit juices in this way during the present autumn, and it is expected that the products will meet with a large demand among advocates of temperance and as agreeable dietetic beverages for invalids.



## POISONOUS FOOD COLOURINGS.

ANILIN has been and still is with many persons a synonym for poison. This belief was justified by facts existent at the time anilin (so-called) first came into prominence, for that substance and the very few derivatives from it were decidedly toxic, whether from their inherent nature or from the presence of poisonous impurities is immaterial. But now the anilin industry has grown to tremendous proportions. There are a host of anilin or coal tar colours, and of these we should know which, from a sanitary standpoint, are harmless.

A bulletin issued by the Dairy and Food Commissioner of Pennsylvania states that there are seven coal tar colours which possess marked poisonous properties. Of these five are yellow or orange and two green. The names of these poisonous coal tars are:—(1) Martin's Yellow, known also as Naphthalene Yellow and Manchester Yellow; (2) Dinitroresol, or Saffron Substitute; (3) Picric Acid; (4) Metanil Yellow; (5) Orange II., or Beta Naphthol Orange. To these may be added Aurantia, which is classed as suspicious. The two green poisonous colours are:—(1) Dinitroso-resorcinol, and (2) Naphthol Green B.

In view of the fact that the coal tar colours are very extensively used in this country in colouring foods, confections, liquors, soft drinks, etc., it is well to have their toxic or non-toxic nature well understood. The bulletin mentioned believes that the attempt to please the eye by this method is, perhaps, carried too far. In many cases it is a means for concealing inferiority. There seems to be very little evidence that the majority of the coal tar colours thus used are injurious to health. It is, however, a question whether the too extensive and almost reckless colouring of various articles destined to enter the human stomach, even if the colouring matter used is not poisonous, should receive encouragement. The subject of colouring food has been kept under legal control in every country and State where any special legislation in regard to food exists. In most cases, however, all that is attempted is to prohibit the use of those colouring matters known to be injurious to health. New colouring matters are continually appearing in the markets of the world. In order to prevent manufacturers from experimenting upon the public, the use of such substances should be prohibited until their influence upon the human organism has been investigated.

## A BOTTLE THAT CAN BE FILLED BUT ONCE.

SOME years ago it is said that Hiram Walker, the well-known Canadian distiller, offered ten thousand dollars for the invention of a bottle that can be filled once but never refilled. Proprietary medicine manufacturers and other bottlers have long wished for this means of checking the fraudulent imitation of their goods, and apart from the special inducements offered, a large fortune undoubtedly awaits the individual who shall invent such a device as will successfully prevent the refilling of copyrighted receptacles with imitation products. Hundreds of bottles have been patented, but none completely fill the requirements.

Among the best attempts yet made is one recently patented by Mr. Wyckoff in Washington. His bottle may be made of any desired form; it is modified only in its neck, which is composed of three supplementary pieces, a hemispherical cover, pierced with an aperture through which the liquid runs out, a glass disc forming like a stopper, and a little ball interposed between the stopper-disc and the hemispherical cover. When the bottle, not furnished with its accessories, has been filled, it is covered with the disc, the ball is placed on the disc and the cover is then put in place and fastened firmly with a hard cement, the joint being covered with band which would have to be torn off to fill the

bottle again. If the bottle be inverted, the disc descends by its own weight and allows the liquid to fill the cavity of the cover; by then inclining the bottle to one side, the neck remaining downward, the ball presses against the disc, which thus stops up the neck and allows only a certain quantity of the liquid to escape. By repeating the two operations a sufficient number of times the liquid is caused to flow out and the bottle may be completely emptied, but it cannot be filled again except by detaching the neck, which cannot be done because of the cement, and by destroying the trade mark band, which would at the same time remove all absolute guarantee of authenticity.—*Paint, Oil, and Drug Review.*

## NEW PREPARATIONS.

## HARMLESS CONCENTRATED COLOURING.

MESSRS. CHAMPION AND Co., the well-known vinegar and mustard makers, of Old-street, London, E.C., have sent us a sample of their Concentrated Colouring. It is very far ahead in strength and brilliancy to any of the brownings we are acquainted with. Messrs. Champions say of it that the Concentrated Colouring is vatted and matured by age, the finest specially refined sugar only entering into its composition. It is very suitable for chemists in preparing their prescriptions, cutting down alike in alcohol or acid, and such of our readers as have not tried it would do well to do so. Its perfect solubility, strength and brilliancy ought to make it very useful for distillers, brewers, picklers, and restaurant keepers and cooks, to whom a really wholesome colouring like this should be very useful.

## RECORD BREAKING AT BEDFORD.

DETERMINED to vindicate its dignity, Bedford has at last put the Food and Drugs Act into force. Its Town Council last week received the following report:—

"The Analyst reported that during the quarter he had examined a sample of milk submitted by Mr. Barnard Davis (Sanitary Inspector), and had found it to be genuine. The fee for the analysis was one guinea." After this farce with one sample Bedford will, no doubt, be content to "burke" the Acts and allow the public to be defrauded wholesale for another few years.

## TOBACCO AND EYESIGHT.

THAT tobacco has a bad effect upon the sight is now definitely conceded, and a distinct disease of the eye is attributed to its immoderate use. Many cases in which complete loss of sight has occurred, and which were formerly regarded as hopeless, are now known to be curable by making the patient abstain from tobacco. These patients almost invariably at first have colour blindness, taking red to be brown or black, and green to be light blue or orange. In nearly every case the pupils are much contracted, in some cases to such an extent that the patient is unable to move about without assistance. One such man admitted that he had usually smoked from twenty to thirty cigars a day. (*Nursing Record.*) He consented to give up smoking altogether, and his sight was fully restored in three and a-half months. It has been found that chewing is much worse than smoking in its effect upon the eyesight, probably for the simple reason that more of the poison is thereby absorbed. The condition found in the eye in the early stages is that of extreme congestion only: but this, unless remedied at once, leads to gradually increasing disease of the optic nerve, and then, of course, blindness is absolute and beyond remedy. It is, therefore, evident that, to be of any value, the treatment of disease of the eye due to excessive smoking must be immediate, or it will probably be useless.



To the Grocers, Provision Merchants, Pastry-Cooks, Confectioners, and  
the Public of the United Kingdom.



# "LE DANSK"

## MARGARINE.

A Perfect, Pure, and Wholesome Butter Substitute, for Table use  
and every description of Pastry. In Colour, Flavour, and Texture,  
equal to Best Brands of Butter, costing one-third less. This unique product stands far above  
other makes, and has received honour everywhere. Has the largest sale in the world!

**"THE LANCET"** (the leading Medical authority of the world) says:—

**"It is of pure and excellent quality."**

**Monsieur ARNAUD** (Chef to his Grace the Duke of Westminster) says:—

"I hereby certify that **"LE DANSK"** is equal to butter for pastry making in the way  
of taste and lightness, and superior to same in giving it a rich colour. I can testify to the above, having  
made full experiment.

(Signed) S. ARNAUD."

AGENTS FOR THE SALE OF "LE DANSK" IN SEALED BOXES

H. Alexander, 66, Mount Grove-road, Highbury.  
Ambrose & Son, General Supply Stores, Loughton, E.  
Bayly's Stores, 16, Seymour-st., Euston-sq., N.W.  
James Bartlett, 82, Chalk Farm-road, N.W.  
John Collier & Co., 120 and 122, Bow-road, East.  
W. J. Cartwright, The Stores, and 6, Chichele-  
parade, Cricklewood, N.W.; also at 6, Station-  
parade, Willesden, N.W.  
Crisp & Co., 67-83, Seven Sisters-road, N.  
W. H. Curry, 40, High-street, South Norwood.  
W. H. Cullen, 2, Pond's-buildings, High-road,  
Lower Clapton.  
W. H. Dent, 297, Kennington-cross, S.E.  
Dowling & Son, 20 & 30, King-st., Tower Hill, E.C.  
The Crystal Palace Supply Stores, 80, Westow-hill,  
Upper Norwood. Edmonds & Co., proprietors.  
Rowland Ellis, 119, High-street, West Norwood.  
J. Everett & Co., Everett's Stores, St. James's-  
street, Walthamstow, E.  
T. G. Edwards (successor to Thomas Gibbs), 54,  
Upper Baker-street, W.  
Edwards & Son, 68, Marchmont-street, W.C.  
J. Frear & Son, 1 & 2, Algernon-terrace, Hendon,  
N.W. Victoria-road, Hendon, N.W., and Burnt  
Oak, near Edgware.  
W. & G. Forth (late H. Ward & Co.) 272, High-  
road, Chiswick, W.  
James Grogan & Co., 173, Blackstock-road, N.,  
and 1, Broadway, Highbury.  
D. A. Guy, 4, Formosa-st., Warrington-crescent, W.  
T. W. Hawes, 11 & 13, High-st., Camden Town.  
Harrod's Stores, Limited, Brompton-road, S.W.  
F. Holland, 10, Grove-terrace, Holland-park, W.  
H. Hetherington, High-street, Woodford.

Jones Brothers, 348 to 366, Holloway-road, N.  
R. Jones, 32 and 33, Chrisp-street, Poplar, E.  
C. Kibble & Co., 49-57, Broadway, Deptford, S.E.  
F. H. Kerry, 20, Bellevue-rd., Wandsworth Com-  
mon, S.W.  
John Kettle, 58, Woodgrange-road, Forest Gate.  
The Kensington Stores, 64 to 74, Hammersmith-  
road, W.  
Leverett & Frye, Ltd., 1 & 2, Strathavon-terrace,  
Hendon, N.W.  
Leverett & Frye, Ltd., 31, High-st., Islington, N.  
Leverett & Frye, Ltd., Competitive Stores, 111,  
High-road, Streatham, S.W.  
Leverett & Frye, Ltd., Finchley-road, N. Finchley.  
Leverett & Frye, Ltd., 86, High-street, Notting  
Hill, W.  
Leverett & Frye, Ltd., 35, Upper George-street,  
Edgware-road, W.  
Leverett & Frye, Ltd., 6, Castle-ter., Belvedere,  
Kent.  
Leverett & Frye, Ltd., 88, Peckham-road, Peckham,  
S.E.  
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Norwood.

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Thomas Pelling, Broadway, Barking, E.  
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Parker's Stores, 112, Norwood-rd., Tulse-hill, S.W.  
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# Food & Sanitation

THE PUBLIC ANALYTICAL JOURNAL.

[Registered at the General Post Office as a Newspaper.]

VOL. VII.—No 226.

LONDON: SATURDAY, DECEMBER 5, 1896.

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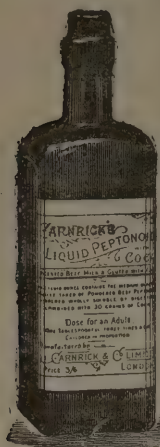
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## Food and Sanitation.

SATURDAY, DECEMBER 5TH, 1896.

### IS THE OUTLOOK OMINOUS FOR SHAREHOLDERS, ETC., IN MARGARINE COMPANIES?

IF the opinions of the public analyst to the West Sussex County Council are well founded, the outlook for those concerned with margarine making is a sorry one.

"It is most gratifying to me," says the analyst, Mr. Otto Hehner, "to be able to report that the adulteration of butter with margarine is becoming far rarer than it used to be a few years ago. Here, again, it is mainly the lowering of the price of butter which militates against adulteration with margarine, which is now but little cheaper than butter. If, by further

development of home and colonial butter-production, the prices of butter decline but little more, as they probably will within the next few years, margarine manufacture will almost certainly cease altogether."

There is very little room for doubt that Mr. Hehner's opinions are founded upon an exceptionally good knowledge of the trade, and deserve the gravest consideration of all interested in the margarine industry. Difficulties such as the present one of excess water in Irish butter favour margarine, which has a much lower percentage of water, but we must recognise that advantages like this are unlikely to exist much longer. We put the question fairly before the Irish butter factors three years ago, when representative Irish butter merchants and others gave evidence in favour of even as much as 24 per cent. of water in butter. They then sowed the seed of the distrust the Irish trade is now reaping, but, as we have said, the difficulty is only a passing one. Last week a large and representative meeting of Manchester wholesale butter importers was held to discuss the advisability or otherwise of appealing against the stipendiary magistrate's decision, when he fined an importer £5 and costs a week ago for giving a "false warranty" with Irish butter, which had been guaranteed to him as pure by the Irish shipper. The meeting felt very strongly that the matter mainly, if not solely, affected Ireland, and that it should be rectified there by those connected with the trade and others interested in safe-guarding an important industry. It was pointed out that if the Food and Drugs Act were rigidly enforced at all Irish markets and heavy penalties inflicted in Ireland, the fraudulent addition of water to butter would soon disappear, as by this means the position of every person dealing in the article between the producer and consumer would be almost safe, and the guilt brought home to the manufacturer. Advice of counsel had been obtained, which was in support of the stipendiary's judgment. After a long discussion it was decided not to appeal the case. As the question now stands Irish butter cannot be sold in England without giving warranties, and this exposes shippers to the great risk of having to appear before benches of magistrates in any part of Great Britain when the butter contains over 20 per cent. of moisture. This opens up very serious and inconvenient consequences for Irish merchants, and unless drastic measures are immediately taken at all Irish markets to reduce the water in salt butter, it is difficult to see how the trade can be carried on.

The importers and the Irish factors are thus saying to-day precisely what we said three years ago, and with their trade thus imperilled they must, *nolens volens*, take drastic measures, and secure what we then advocated, viz., a vigilant and extended enforcement of the Food and Drugs Acts in Ireland. The fact, therefore, that some disrepute has fallen upon Irish butter offers no permanent advantage for margarine. The question, therefore, resolves itself into this: Can margarine hold its own on its merits? In our opinion, it can. As prepared by the best makers it has many advantages over butter, and, weight for weight, at the same price as butter, it is better value for the consumer. The exhaustive investigations published in FOOD AND SANITATION in February, 1894, proved this to be the case. We pointed out that hitherto the belief in England has been that it is the vendor of butter mixtures and of margarines who plunders the public. The revelations, therefore, in various parts of Ireland, at Manchester, Bolton, Skipton, etc., come as a rude shock, disclosing as they do the fact that the very persons who vehemently demand the suppression of the sale of margarine and butter mixtures, and clamour for special legislation that margarine should be coloured pink or blue, are themselves not only guilty of adulteration in its meanest and most artful forms, but that by their own admissions they are defrauding the English



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public, who buy their butters of about £500,000 per year. It would be hard to find anything better calculated to inspire disgust in all right-minded persons than these shameful revelations, which prove that the butter merchants who, with one hand, draft Bills to make it compulsory that margarine should be coloured pink, with the other hand adulterate their butters with that margarine they are never weary of denouncing, and that they have perfected a system of swindling the public of 1d. to 1½d. per pound upon every pound of salt butter they produce, by selling at *butter price water made to stand upright*. Nay, worse, in defiance of truth and of scientific knowledge, they declare the butter cannot be made with less than 20 to 24 per cent. of water in it. We have gone a long way with the movement to encourage native dairy farming, but we are not amongst those who will lie for it, who will aid shoddy patriots to, "with tongue i' th' cheek," swindle grocers and the English public. The time has arrived when a firm stand must in the public interest be made against the gigantic swindles that honeycomb the butter trade. We demand that margarine shall be sold as such, but in making this demand we are by a parity of reasoning forced to also insist upon butter being sold as such. As to giving to margarine a pink or other objectionable colour, that is not only an absurdity, but beside the question, for if it be wrong to colour margarine it must be equally wrong to colour butter, yet there is very little butter sold that is not artificially coloured, the same as margarine is. As we believe in accepting no statements upon hearsay, we resolved to make an independent series of investigations into the relative degrees of purity of butters, margarines, and mixtures at present publicly on sale in England.

In their work upon "Butter: Its Analysis and Adulterations," Mr. Arthur Angell and Mr. Otto Hehner said: "Good and carefully-prepared butter should not contain more than 10 per cent. (water), and it can easily be made with much less."

"As an absolutely valueless constituent," say these experts, "it should be squeezed out as completely as possible during the preparation of the butter. The buyer and consumer of butter intends only to purchase the fat, and should, therefore, never get a large proportion of water, paying the same price for it as butter." Yet this is exactly what the butter buyer does get, as will be seen by a comparison of the following analysis made for us:—

|                                                                     | Water. | Salt. | Fat.  |
|---------------------------------------------------------------------|--------|-------|-------|
| A North of England Co-operative<br>Irish butter, at 1s. 2d. per lb. | 18.46  | 4.15  | 74.48 |
| A South Co-operative Society's<br>butter, 1s. 2d. per lb. ...       | 17.39  | 3.65  | 76.24 |
| A margarine, high-class, at 11d.                                    | 10.80  | 1.28  | 86.54 |
| Danish butter, 1s. 4d. per lb. ...                                  | 13.29  | 1.30  | 83.98 |

In the Manchester cases prosecuted, it may be remembered that the contention of the Irish butter factors was that butters honestly made could contain 25 per cent. of water. The usual 4 per cent. of salt in Irish salt butter raises the percentage of salt and water, for which butter price is paid, to 29. Now, if we compare this with a high-class margarine which sells at 11d. per lb., and contains 12.06 per cent. more fat than one of the Irish butters in question, and 10.30 per cent. more fat than the other, the better value of margarine is proved. Further than this, it contains 7.66 per cent. less water than the one, and 6.59 per cent. less water than the other, whilst it has 2.49 per cent. less water than the finest Danish butter analysed. The Irish salt butter factors have therefore to face the fact that they ask 1s. 2d. per lb. for butters containing but 74.48 per cent. of fat, and 22.61 per cent. of salt and water, whilst more nutritious, equally assimilable, and cleaner butter substitutes, containing 12 per cent. more fat, and 12.53 per cent. less salt and water, are sold at 11d. per lb., and that they are superior in flavour, manufacture and keeping properties to the butters they are so rapidly displacing; that, in plain words, if the Irish butters in question are worth 1s. 2d. per lb. the margarine analysed is worth 1s. 5½d. per lb. instead of 11d. These facts ought surely to open the eyes of those who, by carelessness and dirty manufacture, excess water, and the like, have well-nigh disgusted the English public with Irish butters, to the knowledge of the stern truth that if they are to sell their produce in our markets it must be much improved, and that immediately. It is alleged that finest Danish, Brittany, English, and Irish dairy butters have a decided superiority in the bouquet; but in this some margarines in many cases are their superior, whilst the average low-priced, adulterated, indigestible, partially decomposed, and rancid article so generally sold at 1s. to 1s. 2d. per lb. as butter is far inferior. The mixture has in addition the added advantage that it contains a smaller proportion of curd, and is, therefore, less liable to the fermentative action which sets up in butter and terminates in the liberation of the acid that causes rancidity.

Margarine at 6d. and 8d. per lb. stand nearly as much better than butter on their merits. As regards that other factor in the argument, the very low prices of Colonial butters, and the development of that industry, we must not forget the fact that the low prices indicated resulted in a heavy loss, and that there are no facts warranting the belief that Australia, for example, could continue to send us butter at far less than its cost. Surplusage we might get at occasionally unremunerative prices, as in the case of American wheat, but those who remember the sweeping prophecies of the end of wheat growing in the United Kingdom do not find them verified to-day. There is increase of population in the producing countries to be considered, and a score of factors which may lead to the employment of capital in our colonies to better advantage than sending butter to England at a loss of a few pence per pound. On the whole we do not think the outlook for margarine is so ominous as some think.

## THE CONDENSED MILK QUESTION.

SINCE we first raised this question in our issue of August, 1892, a great deal has been done in the law courts and before the House of Commons Committee to secure the reforms necessary for public health, which we were the first to demand. The cry of the children has been throttled by High Court judgments, which, although the legal light responsible for them had many good qualities, it is hard to speak of without contempt for the man or the mind who could so use the law. That the wrong will be righted, we believe, is as certain as it is that the day will follow the night, and it is gratifying to find county councils and local bodies



throughout the country recognising the wrong and protesting against it. We notice, in the *Durham County Advertiser* of November 27th, the following very able letter:—

#### CONDENSED MILKS.

To the Editor of the *Durham County Advertiser*.

DEAR SIR,—Although you were good enough to publish so fully the report of the chief inspector of food and drugs, which was presented to the County Council at their last meeting, I am induced to ask for a few more lines of your space in order that the public may have put before them some further particulars on the subject of condensed milk, and be able to realise the grave danger, especially to infant life, which those particulars imply.

The analyses given in the chief inspector's report, and to which I wish particularly to refer, are as follows:—

|                  | No. 1. | No. 2. | No. 3. | No. 4. |
|------------------|--------|--------|--------|--------|
| Water ... ..     | 22·97  | 25·58  | 31·94  | 26·74  |
| Non-fatty solids | 67·88  | 66·15  | 67·02  | 73·10  |
| Fat ... ..       | 9·15   | 8·27   | 1·04   | ·16    |
|                  | 100·00 | 100·00 | 100·00 | 100·00 |

Here we have samples taken during last quarter of four different brands of condensed milk. Of Nos. 1 and 2, I have nothing to say except that the analyses indicate a fair quality of milk. The best qualities should contain not less than 10 per cent. of fat.

Nos. 3 and 4 are very different. They bear on their labels a statement in small type to the effect that they contain "skimmed milk." This, to begin with, is a false description. They are not composed of skimmed milk, but of milk from which nearly the whole of the cream has been abstracted by means of a cream separator (in No. 3 90 per cent., and in No. 4 98 per cent.), and consequently one of the most important and nourishing constituents of milk has been removed. The Local Government Board, in a recent report, stated that "no doubt plenty of condensed milk is sold which has not been tampered with in this fashion, and it is important that the public should be taught to reject that which has been deprived of nearly all nutritive value.

It needs no words of mine to point out that preparations such as these, if used as the sole food—or even as occasional food—of infants must be regarded as highly dangerous. Infants fed on them suffer from diarrhoea, and a slow process of starvation must ensue.

Only the other day at a meeting of the Willesden District Council, Dr. Stoker, a member of the Council and one of the Poor Law doctors of the parish, declared that in his opinion 58 cases of infant death from diarrhoea reported by the medical officer of the district were due to the use of condensed milks of poor quality.

That these condensed skimmed milks are used in large quantities in this county, admits of no doubt. Poor people buy them because they are cheap, not knowing their true nature. The tins containing them are tricked out with highly-coloured and misleading labels; indeed, their appearance is the only good thing about them.

That they are also used as infants' food in this county must equally be admitted, and the excessive—I had almost said awful—infantile mortality prevailing in certain districts—notably in the one in which I live—is believed to be due in part to this cause.

What, then, it may be asked, can be done to stop their sale?

It so happens that the law contains no provision whereby the manufacturer can be visited with the punishment he so richly deserves. The County Council can do nothing except to inform the public through its reports, of the danger to which they are exposed. As acting chairman of the Finance Committee, I had hoped at the last meeting to have an opportunity of calling

public attention to the matter, but time failed me, and I must therefore trust to your courtesy to print these few remarks.—I am, dear sir, yours truly,

G. H. WRAITH.

Moor House, Spennymoor."

The Durham County Council, its officials, and Mr. Wraith are to be congratulated on having put this important question so clearly before the public. It is a work which other public bodies would do well to extend.

#### LOG-ROLLING EXTRAORDINARY.

DID anybody ever hear of Mr. Percy B. Rowland, B.A.? He has written an essay, and the *Star* thus twaddles about it:—

"A brilliant Oxford man, Mr. Percy F. Rowland, B.A., who has been an occasional contributor to the *Star*, won the Oxford University Cobden prize this year for his essay on 'How Far has the Progress of Events Modified the Objections Raised in Past Times to the Practice of Taking Interest?' The essay is now published as a shilling pamphlet by Messrs. McCarron, Stewart and Co., of Sydney."

It is about time the *Star* offered a prize for an essay, and we would suggest as a subject the following:—

"How far is it consistent with real journalism that stupid twaddle like the above *Star* puff should find a place in the columns of a newspaper?" Richard Le Gallienne on literature is bad enough in all conscience, but a person who will in cold blood inflict an essay on "How Far has the Progress," etc., really ought not to be encouraged in his folly by being called brilliant. Our readers will know what he ought to be called.

#### OXFORD COUNTY COUNCIL AND ADULTERATION.

THE County Analyst says:—"I have the honour to report that during the past quarter, thirty articles have been submitted for analysis by the inspectors appointed by the County Council, comprising milk, butter, bread, and cheese samples. The only adulteration found was in the case of one milk, to which four per cent. of water had been added, although another sample was very poor, and barely reached the standard. A sample of fattening cake was analysed and found to agree fairly well with the guaranteed composition; a clay earth and two samples of soil have also been analysed. Twenty-three drinking waters from various places in the county have been examined, and all except four were found of good quality. I have further examined thirteen effluents from sewage farms, etc., discharging into the Thames or its tributaries, which with one exception were in my opinion satisfactory in character."

#### WHAT IS OFFAL?

A. V. TREWIN, of King's Caple Court, near Ross, Herefordshire, was summoned before Mr. Haden Corser, at Clerkenwell, on November 28, for depositing at 95, Charterhouse-street, Smithfield, on October 22, four quarters of beef, which were unsound and unfit for the food of man.—Mr. Matthew Hale prosecuted on behalf of the Holborn District Board of Works, and Mr. Ricketts appeared for the defendant.—The meat was consigned to a shop kept by "Mr. Venables," meat salesman, 95, Charterhouse-street.—George Timothy Billing, sanitary inspector, saw it deposited at the premises, and at once seized it. The quarters were wrapped in cloths, to each of which was attached a label bearing the word "offal." The meat was sodden.—Mr. Ricketts: I admit the meat was unfit for human consumption.—The witness Billing said he was a practical butcher. In the trade the word "offal" meant the



head, tongue, liver, and tripe, and all the organs of a healthy animal used for the food of man.—Mr. Ricketts: Did the labels contain the fact that the animal had been killed because it was suffering from milk fever?—The Witness: Yes.—Do you know the meaning of the word "offal"?—Yes; I know the trade meaning of the term.—Mr. Ricketts: Ah; but the dictionary meaning? (Laughter.) Offal means "waste meat, carrion, refuse." (Laughter.)—The Witness: That is nothing to do with the trade term.—Mr. Ricketts: This meat was manifestly unfit for food was it not?—The Witness: No. It might have been sold had I not seen it. Such meat is usually boned.—Thomas Ward, salesman to "Venables," was asked by Mr. Hall the trade meaning of the word offal.—The Witness: We call heads, tongues, hearts, and livers offal.—Mr. Hall: All good to eat?—The Witness: Yes, I should like to have a bit now. (Loud laughter.)—A railway servant employed at the station at which the meat was consigned, said the defendant told him the four quarters were going to the "Zoo."—Mr. Ricketts re-called the witness Ward, and asked him whether Mr. Venables received a letter from the defendant concerning the meat, and stating that the animal was killed because it was suffering from milk fever.—The Witness: I don't know. There ain't a Mr. Venables. He's dead and gone. I'm working for a widow. (Laughter.)—Dr. Bond, medical officer, said the meat was neither fit for the food of men nor animals.—Mr. Ricketts submitted that the meat was not sent to London for human food. It was consigned as offal, and intended for the food of animals, and called the defendant, who bore out this statement.—Mr. Haden Corser dismissed the summons.

#### THE CRUSADE AGAINST MARGARINE.

At the Manchester County Police-court, before Mr. Yates, Q.C., and other magistrates, on November 24, William Fenton, 17 Gore-street, Gorton, was summoned under the Food and Drugs Act and Margarine Act for selling adulterated butter, and exposing margarine for sale which was not properly labelled.—Inspector Parkinson, of the Lancashire County Council, in conjunction with the Royal Agricultural Society, said he visited the defendant's shop on October 27, and saw a lump of margarine exposed for sale which was not sufficiently labelled. He also saw another piece of butter substance, of which he took a sample. The analysis showed that it contained  $11\frac{1}{2}$  per cent. of water and upwards of 50 per cent. of substance other than butter.—The defendant said his wife attended to the shop, and that he had obtained the "butter" from a man named Piggott. His wife told the inspector at the time of the purchase that she had bought it for butter, and had sold it as such.—The Chairman of the Bench: Have you got a warranty with it?—The defendant explained that he had got an invoice, but not an absolute warranty.—Ultimately, the cases were adjourned to that day week, and a summons was granted against Piggott to appear as a witness.

Patrick Kelly, 47, Cross-street, Gorton, was charged with having margarine exposed for sale, and not labelled as required by the Margarine Act.—Inspector Parkinson testified as to visiting the defendant's shop on the 27th October, when he asked the defendant's wife for a  $\frac{1}{2}$  lb. of butter. She served him with a substance, but when in the act of doing so said "It is a mixture." He said "All right; give me a pound." On analysis, the sample was found to contain only 55 per cent. of butter.—Mrs. Kelly, who appeared on behalf of her husband, said she told the inspector that it was a mixture, but he insisted on taking it.—The Chairman of the Bench: You have evidently committed two offences, but we are only going to convict in regard to one. A fine of 5s. and costs will be imposed.

Edward Tandy, 126, Stockton-street, Moss Side, was charged, under the Margarine Act, for exposing margarine for sale without having a label attached.—Inspector Parkinson deposed that he called at the defendant's shop on the 28th October, where he saw a substance which was not labelled. He asked for a pound, whereupon the defendant's wife, who served him, declared that it was margarine. He said, "Very well: I will take it." He pointed out at the time that she had no business to expose this substance without a label. The sample he took was submitted for analysis, which was certified as "genuine margarine."—The defendant's wife said that when the inspector called he asked the price of butter, and she replied 1s. 2d. He thereupon said, "Have you any cheaper?" She replied, "I have some margarine," and he said, "Well, I will take  $\frac{1}{2}$  lb." The margarine was not exposed for sale, because she only got it for her own use.—The Chairman of the Bench: Have you any witnesses present?—Witness: There is a lady present who will say that I told the inspector it was margarine.—The Chairman of the Bench: There has evidently been a technical offence committed, and a fine will be imposed of 1s. and costs.

#### IMPORTANT APPEAL IN A GIN CASE.

ARTHUR JOHN SMITH, wine merchant, of the Broadway, Ealing, appealed at the Middlesex Sessions against a conviction by the Brentford justices for having sold adulterated gin without a proper label stating that it was adulterated.—Mr. Tyler, the Middlesex County Council's inspector under the Food and Drugs Act, was the respondent, and was represented by Mr. Bodkin.—Mr. J. P. Grain appeared for the appellant.—Defendant's manager sold to the inspector a bottle of "London gin," which, upon analysis, was found to be forty per cent. under proof. There was a statement to this effect upon the label of the bottle, but the question at issue was whether it was printed prominently enough to constitute a proper notice to the purchaser.—Mr. Grain contended that so long as a notice of any kind was printed upon the bottle that was enough. This particular notice was identical with that used by the whole of the trade, and it might be read by anybody who was not wilfully blind. Appellant

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*This word is registered, and used as a Trade Mark for Best Quality Articles only, and has now become synonymous with quality for the following specialties:—*

#### TEA (Pure Blends).

A—1s. 6d. lb.; B—2s. lb.; C—2s. 6d. lb.; D—3s. lb.; E—4s. lb.

#### PURE CHINA. HT (1) 2s. lb. HT (2) 3s. 6d. lb.

Packed in  $\frac{1}{2}$ lb Bags, 1lb., 2lb., 3lb. and 5lb. Tins; in Boxes 10lbs. and 20lbs.; Half Chests 50lbs. and Chests 100lbs.

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Prepared and manufactured in England on the popular Dutch principle.

Packets—6d. Tins— $\frac{1}{2}$ lb. 8d.,  $\frac{1}{2}$ lb. 1s. 4d., 1lb. 2s. 8d.

FINEST CHOCOLATE ALMONDS,  $\frac{1}{2}$ lb. boxes 6d. and  $\frac{1}{2}$ lb. boxes 1s.

See that all Articles are marked "Kurruwa," and if there is no Agent near please write direct to:—

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had been summoned by Mr. Tyler before the Hendon justices for selling adulterated gin at one of his branch establishments in their district. The label in that case was smaller than the present one, but the summons was nevertheless dismissed, the justices advising Mr. Smith to make the label larger. This was done, and it was in respect of this very enlarged label that he was convicted at the Brentford Police-court.—Mr. Bodkin contended at length that the label was not a sufficient notice, and handed the bottle of gin to Mr. Littler for examination. Mr. Littler said the appellant would have done better to construe the recommendation of the Hendon justices more liberally. The label was not a proper notice to the public, either according to the meaning of the law or according to common sense. It ought to have been printed much larger.—The Court held that the label was not a legible one, and dismissed the appeal with costs.—Mr. Grain asked that a case might be stated for the consideration of the High Court.—Mr. Littler declined, on the ground that the point at issue was one of fact and not of law.

#### IS "HOVIS" FANCY BREAD ?

JOSEPH CAMPION, baker, Chapel Ash, was charged at the Police-court, Wolverhampton, on November 14, with causing bread to be sold otherwise than by weight.—Mr. Bless Hell, who defended, said the purchaser did not ask for the bread, which was "Hovis," to be weighed, and he contended that this was fancy bread and was exempt under the Act.—The magistrate's clerk, Mr. E. H. Thorne, said it was decided in the High Court of Justice in the case of the V.V. Bread Co. and Stubbs, that the mere quality or quantity of the yeast used did not constitute the bread fancy. The Stipendiary Magistrate, Mr. Neville, recently held that "Hovis" was not fancy bread.—Defendant was fined 40s. and costs.—For similar offences under the Weights and Measures Act, T. Powell, Lowe-street, was fined 40s. and costs, and Paul Parker, baker, Tottenhall Wood, 10s. and costs.

#### A CORONER ON THE LATE SIR B. W. RICHARDSON AND TOTAL ABSTINENCE.

At an inquest in Birmingham, on Nov. 27, Mr. Pemberton, the City Coroner, in his remarks, pointed to a specially illustrious victim, as he held, of imprudent abstinence. This was Sir Benjamin Ward Richardson. Mr. Pemberton said he knew Sir Benjamin well, and felt that his total abstinence for twenty years had shortened his life. Having regard to the climate of England and the work that he did, he would have benefited by the moderate use of alcohol. This is carrying the war into the adversary's camp with a vengeance, for there was no more uncompromising foe to alcohol, in every form, than the deceased physician.

#### RELATIVE VALUES OF CATTLE FOODS.

RECENT German experiments upon this subject show that, leaving out of account the fat-formation and albuminoid ratio theories, the chief things that should guide a farmer in selecting extra foods are the percentage of dry, digestible, nutritive matter which they contain, and the cost. Tables have been published showing the dry, digestible matter in all substances used as food, from which the following table has been calculated for a few of the commonest foods. It shows the number of pounds of useful matter in a ton of the foods in their ordinary state, the current price per ton, and the food-value per ton as compared with grinding barley taken at £1 per quarter, 54lbs. per bushel. The feeding-value of barley is generally known, and its price

does not vary much, and therefore it has been selected as the standard to compare other foods by :—

| Food.              | Lbs. digestible per ton. | Current price. | Value compared with barley. |
|--------------------|--------------------------|----------------|-----------------------------|
| Linseed oil ...    | 2,240                    | £18 3 0        | £7 18 0                     |
| Treacle ...        | 2,016                    | 5 7 6          | 8 18 0                      |
| Maize ...          | 1,735                    | 4 15 0         | 6 2 0                       |
| Beanmeal ...       | 1,631                    | 7 7 6          | 5 15 0                      |
| Cotton cake ...    | 1,530                    | 6 15 0         | 5 8 0                       |
| Barley ...         | 1,478                    | 5 4 0          | 5 4 0                       |
| Linseed cake ...   | 1,451                    | 6 17 6         | 5 2 0                       |
| Oats ...           | 1,337                    | 4 18 0         | 4 14 0                      |
| Hay, mixed ...     | 1,028                    | 3 2 3          | 3 12 0                      |
| Potatoes ...       | 560                      | 1 10 0         | 1 19 0                      |
| Pasture grass ...  | 307                      | (?) 0 15 0     | 1 2 0                       |
| Druff ...          | 305                      | (?) 0 15 0     | 1 1 0                       |
| Swedes ...         | 226                      | 0 6 0          | 0 15 0                      |
| Yellow turnips ... | 200                      | 0 5 0          | 0 13 0                      |
| White turnips ...  | 164                      | 0 4 0          | 0 11 0                      |

#### HOW GROCERS ARE VICTIMISED.

IN July last we complained that certain members of the London Chamber of Commerce were using the Grocers' Associations for their own purposes over the coppered peas question. We said :—

"We really cannot for the life of us see where any grocer has any shred of interest in this business. From first to last it is one benefiting the foreigner and the foreigner only. Even the firms who get English grocers to sell their poisoned peas are foreigners, and for the wretched few pence per week of possible profit the grocer may make he is asked to waste his time and money resolving the Local Government Board. Faugh! the thing stinks, for the foreigner is even too mean to pay the expenses of his victim—the prosecuted English, Irish, Scotch, or Welsh grocer. We do not like the spectacle of a grocers' association being hounded into doing the work of foreigners. If the French pea growers, canners, or bottlers want to regain their privilege of poisoning the public, our grocers might at least let them do their own touting and dirty work, and, if the hon. secretary be well advised, he will let them 'hoe their own row.' The Grocers' Association has far better work awaiting it. There is the proprietary tea game, the co-operative humbug, cutting, short weights, and a host of far more important matters all wanting energy."

The Metropolitan Grocers' Association did not take our advice, and the result is the following pitiable position. *The Grocer*, of Nov. 28, says :—

#### "THE SALE OF PRESERVED GREEN PEAS.

In view of such vagaries of county justices as the recent Prestatyn decision, it is high time we had the Board of Reference to settle such questions as the allowable limit of copper in preserved peas. Meanwhile our readers will only be safe in refusing to sell any peas which are not guaranteed to them by the packers to contain less than two grains of sulphate of copper to the pound, with an absolute indemnity against any prosecution for the sale of peas so guaranteed. *We are sorry to learn that the bulk of the French packers, with two or three notable exceptions, have declined to render the retailers any assistance in fighting this question out.* It is pre-eminently a packers' rather than a retailers' matter, and, of course, if the latter find they are not supported by the former, the natural course will be to leave the French packers to fight the question out for themselves."

Who is to pay the enormous costs already incurred, and what are grocers to think of officials who can be thus made catspaws of? This ought to be a lesson to them.



## MEAT.

AT St. Helen's, on November 24, a butcher named William Fishwick, of 53, Peter-street, was charged with depositing for sale unwholesome meat. The Town Clerk (Mr. W. J. Jeeves) prosecuted. Mr. H. L. Riley defended, and objected to Alderman Harrison and Mr. Dromgoole, who had heard a case on the previous day of a somewhat similar character, and bearing upon this case, sitting upon the Bench.—The Town Clerk said the objection was frivolous and improper, and Alderman Harrison said he saw no objection to his sitting on the Bench.—The case was then proceeded with, and the evidence for the prosecution was that a mass of tubercular matter being found at the Corporation Abattoir, inquiries were made, and three pieces of meat were found in Fishwick's shop which had been stripped, but which still bore traces of tuberculosis. The Medical Officer of Health said the meat was undoubtedly unfit for human food. In reply to the Bench, the meat inspector said the animal was not killed at the public abattoir, but the intestines were found there. The Town Clerk remarked that they might have been put there to take away suspicion.—Mr. Riley, for the defence, pleaded defendant's good character, and urged that if he had omitted to take proper precautions by not employing a proper man, they ought to deal with him under the Summary Jurisdiction Act.—William Green stated that he usually killed for defendant, but on the day this animal was killed he was ill, and James Hatton deposed to helping to kill the beast in question; he thought the beast was all right.—In reply to the Town Clerk, he said the pleura was not stripped in his presence.—James Fishwick, defendant's son, said the last witness told him the animal was all right. He had never heard of the offal being taken to the Corporation slaughter-house.—The Bench imposed a penalty of £15, or two months' imprisonment.

AT Birmingham, on November 24, William Peet, who formerly carried on business as a butcher at 98, Longmore-street, was summoned for offering for sale a quantity of meat which was unfit for human food, on July 25.—Mr. Hiley explained that proceedings were instituted directly after the offence, but the defendant went away to London, and had only been found within the past week.—Edwin Hothersall, one of the city inspectors, said he found at defendant's shop a piece of beef, three shoulders, two necks, and four breasts of mutton, and 3lb. of mutton chops, which were mouldy, slimy, very much decomposed, and totally unfit for food.—Mr. Parker, veterinary inspector, said the meat was so bad that it would have been dangerous to eat it.—Defendant said it was bought for best quality meat, but came out of the ice-house bad.—A fine of £5 was imposed, defendant being committed to gaol for a month in default of paying the money.

## EAST SUFFOLK COUNTY COUNCIL AND FOOD ADULTERATION.

THE report of the public analyst showed that he had examined samples of milk, butter, bread, cheese, and ginger. One lot of butter contained 5·7 per cent. of added water, and three lots of milk were adulterated, two with 9 and 6 per cent. of added water, and one with 7 per cent. of skim milk. The milkman who put in 9 per cent. of water was summoned at Lowestoft, and fined £1 10s. 6d., including costs; other offenders were cautioned.—Mr. Herman Biddell said that was really no punishment to the milk seller. He would simply pay the money and go on the same as before.—Mr. Bradbeer suggested that the names of offenders should be brought before the Council and made more public. That would probably have a deterrent effect.—No further action was taken.

## WHISKY DILUTION.

AT York, on November 14, John Leadley, of the White Horse Inn, Upper Poppleton, was summoned for selling whisky which was not of the strength required by the Act, on Oct. 12.—Mrs. Leadley appeared to answer the summons.—Henry Gamble, an inspector employed by the West Riding County Council, visited the house with his assistant, and they purchased a half-pint of whisky from Mrs. Leadley. He told her it was for analysis, and divided it into three parts, leaving one with the defendant, retaining one himself, and sending the third to Mr. A. H. Allen, the analyst for the West Riding County Council. The latter had given a certificate showing that the sample he received contained 14·3 per cent. excess of water. When told what the whisky was for Mrs. Leadley said that if she had known it they wouldn't have got that sample.—Mrs. Leadley admitted selling the whisky, but said she had been laid up with an injury to her arm, and someone else must have put too much water in the whisky when mixing it. They only kept one quality of whisky, and that was the best.—The Chairman said the Bench considered it a very bad case, and they must come to the conclusion that this was not the first time such a thing had occurred. A fine of 40s. and costs would be imposed.—The total was £4 5s., and the money was paid.

## ADULTERATED SPIRITS AT NEATH.

SARAH THOMAS, of the Shakespeare Inn, was fined £2 10s. and costs for selling adulterated rum, and Wm. Cambridge, of the Narrow Gauge Inn, was fined £3, including costs, for selling adulterated whisky.

## GIN.

AT Retford last week, Joseph Crookes, landlord of the Anchor Inn, Carolgate, was charged with selling adulterated gin.—Mr. W. A. Charles defended.—Mr. George Ernest Garforth, inspector under the Food and Drugs Act, stated that on October 13 he called at defendant's house and was served with sixpennyworth of gin. He divided this into three parts, leaving one with defendant, keeping one himself, and sending the other to the public analyst. His certificate was to the effect that the gin was 38·7 degrees under proof, 94·3 parts being gin, and 5·7 parts being added water.—In defence, Mr. Charles submitted that the gin keg being empty, Mrs. Crookes put in another pint of gin unknown to her husband, and this was not of the proper quality. He asked the Bench to consider the spirit of the Food and Drugs Act, which was to prevent anything being done to the detriment of the customer. But in this case they were aware that gin evaporated more quickly than any other spirit, and the gin supplied to the inspector contained only 5·7 points of added water. Defendant had only been in the house six months, and he would not be likely to jeopardise his license for the sake of five parts added water. He did not wish to cheat Mr. Garforth or anyone else, and he would take more care in future of his spirits.—The Bench inflicted a fine of 5s. and costs, and hoped defendant would look after the kegs better in the future.—Emma Hunt, the landlady of the Ship Inn, Canal-road, was similarly charged, and Inspector Garforth having given evidence, produced the analyst's certificate, which showed the gin to be 44·8 degrees under proof, being 84·8 parts of gin, and 15·2 parts added water. Defendant pleaded that the property had been sold, and she had bought the gin from a fresh company. She had watered it as she had been in the habit, and did not know that the gin would not stand as much water as the previous kind. She had no test, but would get one.—The Bench inflicted a fine of 5s. and costs.



## IRISH BUTTER INDUSTRY.

## IMPORTANT PROSECUTION AT SWADLINCOTE.

At the Swadlincote Petty Sessions, on Nov. 24, before Alderman Barber, H. G. Nadin, T. Stacey, and H. R. Mansfield, Esqs., Thomas Clarke, grocer, Church Gresley, was charged with selling half-a-pound of butter which contained 20·8 of water, on October 19. —Mr. Musson prosecuted on behalf of the county authorities; Mr. W. Simpson (Leicester), defended. —Mr. Musson briefly opened the case, stating, on behalf of the prosecution, that while they contended an offence had been committed, there was no suggestion that defendant had not acted in a perfectly honest manner. —Robert Tomlinson, assistant to Mr. Shortt (assistant analyst for the County of Derby), formally proved the purchase. —Captain Sandys, inspector under the Food and Drugs Act, produced the county analyst's certificate with regard to the butter, which showed that it was adulterated to the extent of 20·8, and stated that genuine butter should not contain more than 16 per cent. Witness said he was not prepared to say anything upon the scientific validity of the certificate, or the opinion relative to the 16 per cent. Witness had seen the report of the Commission upon the subject of butter adulteration, but had not read it carefully through, and could not say whether it had been advised that, with regard to Irish butter, no prosecution should be instituted where the amount of water did not exceed 20 to 21 per cent. He believed it was correct to say that there was no standard as to the amount of water butter should contain. —Mr. John White, F.I.C., and member of the Society of Public Analysts (analyst for the County of Derby), said he saw no reason why there should be any more water in Irish salt butter than in English butter, and the same remark applied to Danish butter. He adhered to the opinion expressed in the certificate that no butter ought to contain more than 16 per cent. of water, and that anything above that was a fraud upon the purchaser. —Mr. Simpson: Where do you get your sublime standard of 16 per cent. from? —Witness: From my own experience; the experience of my brother analysts, and the evidence of Mr. Robt. Bannister before the Commission referred to. In his work as analyst he rarely knew the origin of his samples—whether they were English, Irish, or Danish—and made no distinction between them. He had carefully read the report of the Commission, and agreed with some of the conclusions arrived at, but might point out that the sixty-eight witnesses called were by no means unanimous. If brine or salt were used more largely in the manufacture of Irish butter than in English fresh, then more water might be required. He was not a practical butter-maker, and was therefore not prepared to speak as to the time butter prepared according to Irish methods would keep. He did not accept the statement that if 5 per cent. of salt were used 15 per cent. of water would be required, as salt was soluble in its own bulk of water; 5 per cent. of salt ought to be kept in solution by 4 or 5 per cent. of water. He had made no special experiments with the view of ascertaining the quantity of water in Irish butter. Re-examined: It was only within the last four or five years that butter had been found to contain this excess of water. Although Mr. Bannister did not fix a standard of 16 per cent., he virtually recommended it in his evidence before the Food and Drug Commission. He had analysed samples of English fresh butter made in the ordinary way, and found that the percentage of water varied from 11 to 13 per cent. He was of opinion that no such butter need contain more than 12 per cent., and that more than 16 per cent. was injurious. —Mr. Simpson, in opening the case for the defence, said it was one of vital interest to the Irish butter industry, and these proceedings were being keenly regarded by the Cork butter firms. He pro-

ceeded to give a brief sketch of the origin and development of the Irish butter trade, remarking that they were not in this case dealing with some noxious or injurious mixture, but with an admittedly good and wholesome commodity. He did not object to or dispute the correctness of the analysis of Mr. White, but would point out that that gentleman's experience had chiefly been with English fresh butter, with regard to which he admitted that a fair average would be 16 per cent., and he asked whether the Bench would take his evidence against that of the witnesses before the Commission that a greater amount of salt and water was absolutely required in the manufacture of Irish butter. The sample which formed the subject of the present proceedings had come direct from the headquarters at Cork to Messrs. Wheeler, Son, and Kilpack, of Leicester—who decided to take the full responsibility—and was properly inspected and analysed before being despatched to this country. It had been definitely stated that to fix any standard below 20 or 21 per cent. for Irish butter would expose perfectly honest manufacturers to considerable danger, and to fix the limit at 16 per cent. would destroy 80 per cent. of the trade with this country. Having mentioned that the Manchester Stipendiary, who had recently had several of these cases before him, had refused to convict where the percentage of water was only from 20 to 21, Mr. Simpson proceeded to say that the points he wished to place before the Bench on behalf of his clients were: First, that there was absolutely no fixed standard for butter; secondly, that if there was a standard, that standard ought—so far as Irish salt butter was concerned—in all fairness, to be at 20 to 21 per cent. But Section 6 of the Food and Drugs Act contained two sub-sections, viz., 1 and 4, which, he ventured to say, exempted the commodity in question from any penalty whatever. Sub-section 1 stated that no action would lie "Where any matter or ingredient not injurious to health had been added to the food or drug because the same is required for the production or preparation thereof as an article of commerce in a state fit for carriage or consumption, and not fraudulently to increase the bulk, weight, or measure of the food or drug, or to conceal the inferior quality thereof." Sub-section 4, he thought, told still more greatly in his favour, for it extended the exemption to cases "Where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation." Mr. Simpson contended that these sub-sections covered the case under notice, and that consequently his clients were entitled to acquittal. —Thos. Clarke, the defendant, examined by Mr. Simpson, deposed to purchasing the butter in question from Messrs. Wheeler, Son, and Kilpack. He received from them a verbal guarantee of its purity, and they informed him that they had a written guarantee from the manufacturers. Witness explained these circumstances to Tomlinson when he purchased the butter. —Daniel Cronin, a member of the firm of Cronin and Nolan, provision merchants, of Cork and Manchester, said he was well acquainted with the Irish butter market of Cork. It was a fact that there was more water in Irish than in English butter, and that the same was put in for the express purpose of preserving it. There was a regular and systematic inspection and analysis of the Irish butter before it left Cork. Cross-examined: He knew little about English butter, but was interested in this case, as his firm sent the butter to England.—This concluded the evidence, and the magistrates retired to consider their decision. After a short absence, they returned into Court, and the Chairman said: The decision of the Bench in this case is that the water was unavoidably added in the process of manufacture, and we therefore dismiss the case under Section 6, Sub-section 4, of the Food and Drugs Act.

A similar charge had been preferred against William



Gervase Smith, grocer, also of Church Gresley, the allegation being that the commodity contained 18·4 per cent. of water; but Mr. Musson, in answer to Mr. Simpson, said the charge would not be proceeded with.

#### CIVILISATION IS NOT PLAYED OUT.

THE following printed rules are stated to be displayed at a hotel at a new settlement in Colorado:—

"All gents with shooting irons or other weapons must check them before entering the dining room. Waiters are too scarce to be killed.

"Gents are requested not to attract the waiters' attention by throwing things at them. This is no deaf mute asylum.

"Seven kinds of pie are given with every dinner.

"Tablecloths are changed every Sunday.

"Our food is all of the best quality, our milk is pure, eggs new laid, and the butter speaks for itself.

"Guests tipping waiters must pay funeral benefits in case one should die from heart-disease.

"No more than six eggs will be given each at a sitting.

"Biscuits found riveted together can be opened with a chisel supplied by a waiter. The use of dynamite is strictly forbidden.

"Disputes over articles of food must be settled outside.

"Don't lasso the waiters, because the guest who can't throw the rope gets tarnation hot at discovering himself to be at a disadvantage.

"Gents can take off their coats if they want to, but they must keep on their vests and boots."

#### "CONDIMENTAL" FOODS FOR STOCK.

W. H. JORDAN, director of the Agricultural Experiment Station, Orono, Me., in discussing the results of a number of examinations made of these commercial articles, states that the claims made for the nutrient and tonic properties possessed by them are fairly startling, as lying outside the range of either common experience or scientific knowledge, and on the strength of such claims these wonderful mixtures are sold in most cases at prices ranging from \$100 to \$2,000 per ton. They usually possess an aromatic or other positive odour which, to the uninitiated, gives the appearance of value. They consist principally of common cattle foods or other common materials mixed with small percentages of the cheapest and most ordinary medicinal substances. Mr. Jordan believes that the mixture of ingredients contained in ordinary foods comprises all that are known either to practice or science as useful to animal life. Condimental foods are absurd as medicines. If an animal is well no medicine is needed, if ill, remedies adapted to the case should be administered. Anyone can manufacture his own "condimental" foods at a fraction of their usual cost by mixing a small amount of such common substances as salt, sulphur, saltpetre, fenugreek, caraway, etc., with the daily grain ration. The following paragraph is quoted: "Quack horse doctors and concentrated cattle food manufacturers are twins, and they flourish, not on the ignorance of the farmers, but on that lingering remnant of old times, which made saltpetre and sulphur the universal cure-all for horses and cattle. So far as the medicinal claim is concerned . . . even the treatment of a quack is better and certainly cheaper than the wholesale use of mixtures of unknown composition."

#### THE FOOD PRESERVATIVES QUESTION.

A DEPUTATION consisting of Alderman Hart, Messrs. George Jackson, H. Brown, and H. P. Bloomer, representing the wholesale provision dealers and butter importers in Birmingham, waited upon the Health

Committee of the Birmingham Corporation, on Nov. 24, respecting the prosecutions which have been instituted under the Food and Drugs Act for selling butter containing boracic acid. The deputation urged that the trade were desirous of conforming in every way to the requirements of the law, and pointed out that at present Birmingham was the only place where action had been taken in regard to this subject. It was a most important matter as affecting the food supply, because boracic acid was used as a preservative in the case of many articles of daily consumption. It had not as yet been definitely proved that the use of boracic acid was injurious, and as it was absolutely essential that a preservative should be used in the case of imported butter, they asked that no further prosecutions should take place until a more definite and authoritative statement had been made respecting the chemical properties and the effect of boracic acid on food and the consumers thereof. The committee considered the matter at considerable length, and eventually informed the deputation that they would suspend further prosecutions until additional information had been obtained.

#### WATER SUPPLY IN RURAL DISTRICTS.

EVERY day sees cases like the following, unhappily typical of the condition of hundreds of rural districts. The Blyth and Cuckney Rural District Authority, a short time ago, had a report that the sanitary arrangements of the schools had been improved, but there was no reliable supply of drinking water from a well out of danger of contamination by drainage. The supply at present in use being bad, he could find no water fit for use near the schools. The well water on the Green, which was acknowledged to be bad, was used by the children and the cottagers living near it. The surveyor, Mr. F. Hopkinson, reported upon the outbreak of fever at Blyth, and presumed the cause of the same was through drinking impure water. It is lamentable to consider the amount of disease caused by polluted water supplies such as this in Blyth and Cuckney district, and to realise that a little public spirit and the installation of a comparatively inexpensive system of Pasteur filtration could so easily give a pure water supply, and prevent disease and death. Whilst every part of our kingdom can disclose its conditions of squalor and misery like this, our mighty newspapers are screeching for us to spend English money and shed English blood to right Armenia's misery. If we have it to spare, it would be better spent at home to benefit English people.

#### ALCOHOL AS A PRESERVATIVE FOR FRUITS IN THEIR NATURAL STATE.

THE Société Nationale d'Agriculture, Paris, state that, on the 31st of October, 1894, that is to say, very late in the season, some grapes were collected and placed upon wood shavings in a cellar closed as tight as possible by a wooden door. In the same cellar was placed a vessel containing four ounces of alcohol. Some grapes were also placed in two similar cellars, one of them open and the other closed, but neither containing any alcohol. The temperature of these cellars ranged from 8 degrees to 10 degrees C. On the 20th of November the grapes in the two cellars in which there was no alcoholic vapour were found to be rotten, while in the cellar whose atmosphere had been alcoholised the fruit was perfect and free from mouldiness. On the 7th of December these grapes still presented a very fine appearance, and when tested by experts were pronounced to be of exquisite flavour. At any rate, this method of preservation is extremely simple, may be easily applied, necessitates no special installation, and is not open to objections which apply to boric and salicylic preservatives.



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**"Were it possible to furnish the market at a reasonable price with a preparation of Meat combining in itself the albuminous, together with the extractive principles, such a preparation would have to be preferred to the Extractum Carnis, for it would contain ALL the nutritive constituents of Meat." Again:—"I have before stated that in preparing the Extract of Meat the albuminous principles remain in the residue; they are lost to nutrition, and this is certainly a great disadvantage."**

The Albumen and Fibrine are the only nourishing portions of the Beef, and they are not present in Meat Extracts, &c., which, therefore, are only stimulants and no more nourish the system than the poker feeds the fire.

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# Food & Sanitation

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## Food and Sanitation.

SATURDAY, DECEMBER 12TH, 1896.

### THE WATER SUPPLY OF FALMOUTH AND TEWKESBURY.

If it be any consolation to Londoners to know that they are not alone unhappy in their water supply, they may have it. Tewkesbury and Falmouth during the past fortnight have had to consider the question of a pure supply. In the case of Tewkesbury, the Town Council have received a report from Messrs. Ferris and Co. that "the water was fairly bright, but deposited a filmy sediment, consisting chiefly of micro-organisms. It yielded a decidedly high proportion of albuminoid ammonia. . . . The total solids amounted only to 17 grains per gallon; the residue on evaporation chars.

There is distinct evidence of organic pollution, but our opinion as to its precise significance would depend, to some extent, on the origin of the water. If, as seems unlikely, judging from the locality, it is derived from a well, we should say the latter stood in need of a thorough cleansing, but that the polluting matter was of a comparatively innocuous character. If, on the other hand, it is stream water, whether filtered or not, we should regard it with great suspicion, and we should recommend it not to be used except after thorough boiling." The authorities have, it is said, circulated handbills advising the consumers of the town water to have it boiled before consumption.

They, of course, have no powers to compel those using this dangerous water to boil it. They must, therefore, trust to chance as to typhoid and other diseases consequent on the use of polluted water. Rather an alarming state of things, it must be agreed, for Tewkesbury, but Falmouth appears in even worse case. The Town Council, last week, discussed further complaints, which had been recently received, respecting the quality of the water supplied by the company, and recommended that complaint be again made to the manager.—The adoption of this was moved by Mr. G. H. Fox and seconded by Mr. H. Liddicoat, who called attention to complaints he had heard on all hands as to the water at the high levels. It was wise to bring the company to a sense of its responsibility and let it know that the authority would not allow them to give water of the quality complained of. There was something radically wrong with the water.—Mr. Walton said the pipes were choked.—Mr. Liddicoat said the complaints had reference to the smell, the "fishiness" of the water.—Mr. Phillips did not believe the water was more fishy now than it was twelve months ago.—Mr. Liddicoat moved that the company be called upon to give the sanitary authority facilities for inspecting the waterworks.—Mr. Collins thought they would be taking a wrong step to accept any responsibility.—Mr. Phillips said an analysis taken not long since proved satisfactory. It was very strange the water should suddenly get fishy now. It was not a good advertisement to the town to publish this.—Mr. Fox did not think the company had power to enforce payment if the water was not satisfactory. He suggested another analysis.—Mr. Liddicoat said it was difficult to get a sample; for if they asked the manager he would put them on some place where the water would be approved by the analyst.—Dr. Banks said the complaints invariably referred to the high levels. In the last six weeks he had heard more complaints than during the preceding six years. When the manager was communicated with he gave some explanation about herbs having got into the water.—The Mayor said three weeks ago the Rector of Falmouth said he could not get the water near his mouth because of the stench it emitted. He said there were no herbs about it; it was more like fish.—The report and motion were adopted.—On the proposal of Mr. F. J. Bowles, seconded by Dr. Banks, it was decided to take samples of the water at the high level publicly and without the previous consent of the manager of the waterworks.

"There are only three safe ways of dealing with polluted water," says *The Medical World*. "Do away with the pollution, get a pure supply, or subject the existing supply to filtration by a process which will yield germ-free water. Even in unenlightened India this is recognised, for it is not long since Darjeeling had a Pasteur installation for its water supply. If Tewkesbury cannot remove the causes of the pollution, or get a fresh supply of pure water, the safety of its inhabitants should be considered before everything else, and recommendations to boil water cannot be looked upon as a solution of the difficulty.

A comparison of the death rates from typhoid diseases in cities which use filtrated water with those that do not, show death 100,000 inhabitants:—Unfiltered: Philadelphia, 74; Pittsburg, 127; Chicago, five years'



average, 73. Filtered: London, 17; Hamburg, 18; Berlin, 9.

It is far from flattering to our sanitary progress to find Tewkesbury behind Darjeeling. If Darjeeling can afford to secure a pure water supply for its inhabitants, surely an historic English town ought to be able to equal that comparatively unknown Indian place."

The moral applies with equal force to Falmouth. It is intolerable that large bodies of ratepayers should be compelled to drink any filth the water companies choose to call water.

### WHAT IS A DRAIN?

IN the Queen's Bench Division, on Nov. 28, before Mr. Justice Hawkins, without a jury, the case of *Appleyard v. the Lambeth Vestry*, was concluded. His Lordship delivered a written judgment. The facts of the case appear in the judgment, which was as follows:—This action was tried by me without a jury on October 31, 1896. The indorsement on the writ, which was issued on May 9 in the same year, claimed against the defendants a *mandamus* commanding them, pursuant to sections 69, 71, and 72 of the Metropolis Management Act, 1855, and other Acts hereafter referred to, to repair, cleanse, and maintain the pipes or sewers which carry the drainage of 85, 87, 89, and 91, York-road, Lambeth, in the county of Surrey, from "the point at which the drainage of more than one house is received into such sewers up to the point of discharge into the main sewer in York-road." The indorsement also claims a declaration that such pipes or sewers are "sewers" within the meaning of the said Acts and vested in the defendants. There were no other pleadings. I find the facts to be as follows:—On December 20, 1838, one Saunders, the freeholder, granted a building lease to Messrs. Grissell and Peto of a piece of land in York-road, Lambeth. On this piece of land Messrs. Grissell and Peto erected four houses adjoining each other, Nos. 85, 87, 89, and 91, York-road, which were finished and occupied in the year 1839 or 1840, each being let to and occupied by a different person as a separate tenement. Each of these houses and at least two others, Nos. 8 and 9, Addington-crescent, the property of a different owner, were, and still are, drained by pipes laid for draining the whole six houses by a combined operation, Nos. 85 and 87, York-road, and 8 and 9, Addington-crescent draining into a branch pipe about 9 in. internal diameter. This pipe discharges its contents into another brick barrel drain, about 12 in. internal diameter, into which the drainage of Nos. 89 and 91 is first drained. The whole drainage of the six houses is then conveyed for a distance of 48 ft. to 50 ft. through the barrel drain down to and into and is carried away by the main sewer which runs along York-road at right angles with the barrel drain. The whole of this drainage system, with the exception of so much as is contiguous to Nos. 8 and 9, Addington-crescent, was constructed on the land of the owner of the four houses in York-road until the barrel drain reaches the York-road, and it was so constructed at the same time as the houses were built; indeed, it was formally admitted by the defendants that "the present system of combined drainage of the said houses has existed from the date of the erection of the said houses." The land so leased to Grissell and Peto, with the said houses built thereon, is now vested in the plaintiff for a term which will not expire until Christmas, 1923. On November 28, 1895, the sanitary inspector of the Vestry served on the plaintiff a notice that the drainage was defective, and on January 13, 1896, a further notice to reconstruct in accordance with the bye-laws of the vestry. The drainage was, in fact, defective, and required to be remade. The plaintiff denied his liability, contending that the vestry were themselves liable, and on March 20, by notice in writing, he required the vestry (the defendants) to do the necessary work.

They declined to do so. Thereupon this action was commenced. There is no reason to doubt that the drainage, as it was constructed in 1838, is the same as exists at the present time. Whether it was then legally so constructed or not does not seem to me to be material; there was really no evidence upon the subject; but, if I am at liberty to presume anything, I should say it was legally so, for in October, 1838, the then drainage authority sanctioned the drainage of the barrel drain into the main sewer, and no objection has ever been made to it since—now 58 years. It was common ground that the liability to repair or reconstruct depends upon the solution of the question whether the sewage conduit (to give it a neutral term) is at the present day a "drain" repairable by the private owner, or a "sewer" repairable by the vestry, under the provisions of the Metropolis Management Acts, 1855 and 1862. I need not discuss the sections of those Acts relating to the repair of "drains" by private owners; for it is agreed that, if the conduit in question is shown to be a "sewer" within the meaning of section 250 of the Act of 1855, the vestry is responsible for its repair, their liability to repair it having been imposed on them by sections 68 and 69 of the same Act. By section 68 it is enacted that all sewers vested in the Metropolitan Commissioners of Sewers shall become vested in the vestry of the parish, and by section 69 the vestry are to repair and maintain the sewers so vested in them. That this (if a sewer) was vested in the Metropolitan Commissioners of Sewers under section 7 of the Metropolitan Commissioners of Sewers Act, 1848, was unquestioned. The 250th section of the Act of 1855 very clearly defines what shall be deemed to be "sewers" and what "drains" for the purposes of that Act. It enacts that the word "sewer" shall mean and include sewers and drains of every description, except drains to which the word "drain," interpreted as it is in that section, applies. Now the interpretation given to the word "drain" is as follows:—The word "drain" shall mean and include any drain of, and used for the drainage of, one building only, "or premises within the same curtilage, and made merely for the purpose of communicating with a cesspool, or other like receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed; and shall also include any drain for draining any group or block of houses by a combined operation under the order of any vestry or district board." The Act of 1862 (which by section 110 is to be read with the Act of 1855 as one Act) by section 112 extends this interpretation to "any drain for draining a group or block of houses by a combined operation laid or constructed before January 1, 1856, pursuant to the order or direction, or with the sanction or approval of the Metropolitan Commissioners of Sewers." There is no pretence for saying that the conduit in question is a drain used for the drainage of one building only, but it is a drain for draining a group or block of houses by a combined operation, and it would have fallen within the interpretation given to the word "drain" if, having been laid and constructed before January 1, 1856, it had been so by the order, or direction, or with the sanction, or approval of the Metropolitan Commissioners of Sewers, or since that time of the vestry. I find, however, no trace or evidence of any such order, sanction, or approval of either of these bodies, and I find as a fact that none ever existed. It was suggested, but not much pressed, that I might presume it had the sanction of the local sewer authorities for Surrey and Kent, who certainly did not object; but this is immaterial, for the definitive clause of the Metropolis Management Act, 1855, requires the order or approval of either the Metropolitan Commissioners of Sewers, who had no existence until 1848 (11 and 12 Vict., c. 112), or the Vestry, who took over the powers and jurisdiction of those Commissioners in 1855. The local Commissioners of Sewers for Surrey and Kent, who had jurisdiction in those counties when the houses were built, were a totally distinct



body, whose existence terminated when the Metropolitan Commissioners were constituted by the Act of 1848. I find, for the reasons above-mentioned, that the conduit in question is a "sewer" repairable by the Vestry. I do not think it necessary to discuss the cases cited to me—"Kershaw v. Taylor" (1895) (2 Q.B., 208; C.A., 471); "Vestry of St. Leonards v. Phelan" (1896) (1 Q.B., 533); and "Reg. v. St. Matthew, Bethnal-green" (1896) (2 Q.B., 95; C.A., 319)—for they confirm the view I have taken, and there is not a word to be found in either of them militating against that view.

There was judgment for the plaintiff for the *mandamus* and declaration as prayed for, with costs.

Mr. Tindal Atkinson, Q.C., asked for a stay of execution.

Mr. Justice Hawkins said he had no doubt about the case.

Mr. McCall, Q.C., said that, after his Lordship's intimation, he would not object to a stay being granted.

A stay of execution was granted for 14 days, the judgment to be considered final unless notice of appeal was given within the 14 days.

Mr. McCall, Q.C., and Mr. Morton Smith appeared for the plaintiff, and Mr. Tindal Atkinson, Q.C., and Mr. Muir Mackenzie for the defendants.

#### THE "SNOWDROP" LARD CASE.

AT Westminster Police-court, on Nov. 25, before Mr. De Rutzen, the hearing of the case against Messrs. G. Nicholls and Co., of Wood-street, Westminster, S.W., was resumed. Mr. Bodkin appeared on behalf of the Treasury, and Mr. Frank Safford represented the defendants. Mr. Otto Hehner, public analyst, was recalled. Mr. Safford said that at the last hearing Mr. Hehner (somewhat satirically, he presumed) gave him a book on the subject of lard adulteration for the purpose of improving his knowledge. He wished to examine him on the volume. Answering Mr. Safford, witness said the work in question was issued by the Board of Agriculture of the United States of America. It was a volume on food and drugs, and one of the treatises was on lard adulterants. The work was issued by a Government department after very careful inquiry, and at the time of its publication it brought their knowledge of the subject up to date. It was published in 1887, but now they had further knowledge of the subject. He had seen the photographs in the book showing which was genuine lard and which was stearine, and there was one plate there of lard containing beef stearine—which was called refined lard. It was not a well-known commercial product. In no way was refined lard mentioned as an alternative term with compound lard. Mr. Safford: I find the words here, "Refined lard used to describe lard composed of cotton oil and stearine." Witness: Quite so; it was used for years in reference to compounds until it was found to be an extensive fraud. A Government inquiry was instituted which resulted in these disclosures. Mr. Safford: You say it was for years used as a term for compound?—It was used for years for a lard afterwards found to be a compound, the sale of which in consequence was afterwards suppressed. In page 427 of this book, it is stated that the annual production of lard in the United States is 600,000,000 of pounds, of which half is pure lard, and the other half pure lard mixed with cotton oil and stearine, the

refined or compound lard of commerce. Do you say, in spite of that, that refined lard was not a well-known compound article of commerce?—It was not. It goes on to say that the annual export of lard is about 320,000,000 lbs., of which about 40 per cent. was refined compound lard?—Yes, and sold as a genuine lard. Is it not an alternative term, used throughout this work of a refined or compound lard?—Certainly not. It was discovered that refined lard was a mixture, and an investigation was put on foot, which in the end put a stop to it? When you say an adulterated article, you mean a mixed article?—I mean an article sold otherwise than as described. Refined lard means mixed lard?—Certainly not; a refined lard means a refined lard. (Laughter.) This so-called product known as refined lard was a mixed product?—It was for a long time a mixed product. Until when did that continue?—Until about the year 1887 or 1888, when it became known a fraud was going on. May I fix it in your memory? Do you remember cases heard before Mr. Raffles in Liverpool?—It was raised for the first time in England in that case, but it was raised before that in America. It had nothing to do with the question of refined lard. It was in 1888 that the case was raised under the Food and Drugs Act. Mr. Raffles said the question before him was not on the term "refined lard," but on a question of fact. Mr. De Rutzen: Merely the question of fact. Mr. Safford: Yes. Mr. Bodkin: You remember that last time there was a great deal said with regard to the standard of purity being referred to a board of reference; I want you to explain, by way of illustration, what you meant. Are there certain articles of food which necessarily contain some foreign matter?—Yes, very many.—Is pepper one?—Yes.—Is it possible to get pepper in this country without some admixture of sand or other matter?—It is utterly impossible.—And is there a difference of opinion as to what proportion should be allowed?—There has been considerable difference of opinion. There are also other articles, such as ginger and milk. And those debatable points you would refer to a court of reference?—Certainly. Upon the question as to whether or not an article is pure analysts have no doubt?—There is no doubt whatever that butter should be the fat of milk, and lard a product of the fat of the hog. So that there is no question of a standard of purity when you are determining the analysis of a mixture containing beef and pig fat?—There is no question in cases where there is a substance present utterly foreign to the article itself; an artificial foreign matter, that is to say, made foreign by the process of manufacture?—It is deliberately added. There is a great deal of difficulty with regard to milk, which naturally contains water, but when you have an added article there is no question at all. Then, on the question of cocoa, there was a good deal of cross-examination about that. Was it said by the representative of Van Houtens, in his evidence before the Select Committee, that some of the insoluble fat of the cocoa was extracted from the natural cocoa?—It was said that the fat, which is naturally in the cocoa to the extent of about 50 per cent., was reduced to about 30 per cent.—And that that left the proportion of solid matters rather higher than in the natural state? Yes; by the expression of the fat other matters were concentrated, as it were.—So that there was no addition of foreign matter.—Take this case of lard, is there any purifying or preservative quality whatever in beef stearine when added to lard? Absolutely none.—There is no chemical or other reason for adding it? It is utterly devoid of any preservative action, and does nothing except make a sloppy article into a stiff substance. You take two comparatively cheap ingredients and mix them together, and it has a semblance to a higher article, and the purchaser would be utterly unable to discover it.—You have mentioned 600 or 700 cases of analysis of lard which you have personally conducted; have you ever found a case in



which the article sold as lard or pure lard was ever described as containing beef stearine? Never.—Mr. Bodkin: A great many questions were put to you with reference to Mr. Harris, of Messrs. C. and T. Harris, of Calne, Wilts. Did Mr. Harris say that his firm prepared nothing but the best lard from the intestines of hogs? I believe so.—Did he further say that it was put straight into the bladders? I have no direct remembrance.—Mr. Safford: What he did say was that when he put it into the bladders he called it bladder-lard.—Mr. Bodkin: In this case, where there was 10 per cent. of beef stearine, it was described on the bladder as guaranteed pure? Yes.—And being so stamped, the same as pure flare lard, they would appear similar? Yes.—You have been cross-examined with reference to this book (the American book). That work was published in 1889. When was it that analysts arrived at their present skill in the analysis of lard? That is very difficult to say, because we find out something fresh almost daily.—Did you find it a year or two ago? A year or two ago there were certain things pointed out by myself with regard to the manipulation of fats in order that there should be no confusion between beef crystals and pig crystals. This book was exceedingly valuable to me as giving me the latest information as to the mode adopted by American chemists to discover beef stearine.—Then the expression “refined lard” ten years ago in America had a significance of its own? As far as I understand the question it was discovered about 1886 that a large quantity of lard had been sold as refined lard which really contained only about 50 per cent. of lard. An inquiry was set on foot, and the practice was sternly suppressed. A year or two later, we in England came to hear of this, an immense number of prosecutions were set on foot, and the practice was stopped.—Will you take this number of *The Grocer* for November 14, 1896. I expect my friend Mr. Safford takes *The Grocer* in regularly now. (Laughter.) The learned magistrate has put a pencil mark at the side. Do you find some three or four different kinds of lards priced? Yes.—Will you read the figures? “Lard, Irish, p. blad., 27s. to 42s.; keg, 30s. to 33s.; English, bladders, 36s. to 38s.; Continental, 30s. to 32s.; American, pails, 25s. to 26s.; Compound, or lardine, 24s.” There is a difference of 12s. between best English and lardine?—Best English is more than that; it runs up to 42s. Dr. T. Stephenson said he was a fellow of the Institute of Chemistry, lecturer at Guy’s Hospital on chemistry, and had other qualifications. About last October he got from Police-sergeant Drew two bladders of lard, which he analysed. The bladders were marked as the one produced. Both the lards in the two bladders were of similar composition. He made an analysis of a portion of each bladder, and found both a mixture of lard (pigs’ fat) and beef stearine, in the proportion of about 10 per cent. of stearine and 90 per cent. of lard. He had had a good deal of experience in the analysis of lard. He had been in court on each occasion that Mr. Otto Hehner had been examined and cross-examined, and he agreed with his description of what pure lard should be. It was the rendered fat of the pig, and that coming from the flare was harder than the fats from other parts. He agreed with him that the rendered fats from the other parts of the pig required some stiffening if it was to have the consistency of a good commercial lard. It would be necessary for the lard from other parts of the pig to be stiffened to make bladder lard. Having heard Mr. Hehner’s evidence, he agreed with his conclusions and statement of facts, and there was nothing he would wish to qualify. He had found fibres in samples of beef stearine. He would not expect to find the fibre in any great quantity if the lard had been refined, but there might be some left. Cross-examined by Mr. Safford, witness said that the word “clarifying” would hardly be correct to describe the process of purifying lard. He used the word “refining” for that. There was a substance in lard known as stearine, not commercially

identical with beef stearine. Stearine was a term generally applied to some solid fats in the substance. There was a stearine found in cottonseed oil. Stearine when separated was a pure fat, but it was not the whole of the fat. Fats were separated into solid and liquid fats. Pig stearine was a pure fat in the sense in which he had spoken of it. It was only a portion of the lard, but he would not call it pure lard, because it would not be a commercial product known as lard at all. Lard meant the fat of a pig, which in commerce had a certain consistency which the more solid portions had not. Pure lard was the rendered fat of the pig, and that was equally applicable in whatever way the lard was rendered, so long as it was the fat of the pig. In England, the term lard was applied to lard from the abdominal portion of the pig, which was almost exclusively used for the making of lard. He understood, however, that in America they applied the term lard to the whole fat of the pig. In that way they got those soft lards which were by manipulation stiffened to various grades of lard by different mechanical processes. In America the term lard had been used to imply lard from any part of the pig, and he would not take objection to that term. He did not know that he could point to any authority for saying that pure lard in England meant the fat from a particular portion of the pig, but, speaking from what he knew, he might say that he had been brought up in the country, and in his younger days the word “lard” was never suggested to imply anything but the abdominal fat of the pig. Things had changed since he was a young man, and American lard had been introduced. (Laughter.) At present he would not limit the word “lard” to any portion of the pig so long as there were no foreign addition. If anything was added and left in, it would become adulterated—anything not of the nature, substance, and quality of lard. Fat from any other animal or cottonseed oil would be an adulterant. He hardly thought the addition of lard stearine would be an adulterant, because they were not adding any foreign substance, although it was true they were adding something no longer the rendered fat of the pig. The same kind of pressure was used for expressing pig stearine as ox stearine. He did not suggest that a mixture was unlawful, but it was unlawful to mix two foreign substances and sell the compound as the genuine article. He did not say they could not sell as pure that which was not in its natural state. Pure articles were not always in their natural state. Flour, for instance, was not found in nature.

He did not think that the word “refined” meant that the lard had been stiffened, but only that it had been purified. He could not assume that the word “refined” meant compound. To say they might have pure compound lard he considered a misuse of the term. To apply the term “pure” to a compound seemed to him ridiculous.—Mr. Safford: Do you say that Mr. Nicholls could tell by looking at his lard that it was compound lard or not?—No, I should think not. I could not have told those bladders from pure lard by looking at them. There is no way of finding out except by analysis?—I think not.—Mr. De Rutzen: Assuming for a moment that it is a compound, you might have been taken in, and the whole public?—Yes.—Mr. De Rutzen: Would not the solidity of the lard be more or less increased by the mode of feeding?—Yes, the lard of pigs fed on Indian corn would be softer than that of those fed on barley. It is a well-known fact that American lard does require stiffening?—If you take the whole fat of the pig. Mr. Samuel R. Deacock said he was a cheesemonger of 43, Leather-lane, E.C., and had been in the habit of dealing with Mr. Nicholls, of Westminster. In October of 1895 he gave an order to Mr. Nicholls for some lard. He bought two barrels of lard. The special brand, “Snowdrop,” was mentioned. He could not say whether he asked any question about it. The barrels were delivered to him. In June of that year, Sergeant Drew called upon him,



and had some conversation with reference to the "Snowdrop" brand of lard. In consequence of that conversation he wrote the following letter to Mr. Nicholls:—"Dear Sir,—Had two gentlemen here to-day making enquiries re 'Snowdrop' lard, bought from you. I find on looking up lard accounts that 'Snowdrop' was bought from you. They are acting on behalf of one of the Government Boards. Said lard was not pure, and would let me know more later on." He got the following letter from Mr. Nicholls a day or two afterwards, dated June 12:—"Dear Sir,—In answer to your letter of yesterday's date, re 'Snowdrop' lard, we bought and sold you the lard as pure, and therefore hold you harmless in the matter." He had seen Mr. Nicholls, jun., since, and mentioned the visit of Sergeant Drew, but only since that case came on. He could not remember what the reply was, but the purport of it was that he should be held blameless in the matter. Mr. Safford:—You knew that "Snowdrop" lard had been analysed before?—Yes. Amongst others by Mr. Hehner?—I believe so. Who pronounced it genuine? Mr. Bodkin rose before the witness replied, and said that Mr. Hehner had been in the box for two days, and Mr. Safford refrained from asking a single question of an analysis for Mr. Deacock. He should recall Mr. Hehner to deny that he had a sample from Mr. Deacock or knew anything about him. Mr. Safford: Who was the other analyst?—Mr. Leo Taylor, district analyst for Hackney. Who were the samples analysed for?—For my brother, Mr. T. Deacock, of Kingsland. Did you tell this to Sergeant Drew?—Yes.—Told him that "Snowdrop" lard had been analysed, to your knowledge, by Mr. Hehner and Mr. Leo Taylor?—Yes.—Did you tell Drew the names of the analysts?—Only Mr. Hehner. Did you show Drew the certificate?—No. Did Drew show you any certificate?—No. Mr. Nicholls said he would hold you harmless in the matter?—Yes. Is it usual in the trade to depend upon warranties?—Very usual now. You thought it quite right that Mr. Nicholls should stand by his warranty?—I take it his warranty is a warranty under the Food and Drugs Act. Mr. Bodkin: Do I understand that you sent some of this "Snowdrop" lard to Mr. Hehner?—My brother told me so. How do you know to whom he sent it?—Merely by what he told me. Have you ever seen a certificate of any person to whom he sent it?—No; he has that. Has he got a certificate signed by Dr. Hehner?—Yes; he told me so. When was that?—Months ago, when the question was raised last year when Mr. Moore was going round London? I should say that it was about Christmas. Would you say who sent it to the analyst? I would rather not say; I will write it down. What did you pay for this "Snowdrop" lard?—That cost about 42s. a cwt.; lard was dear then. The best lard fluctuates 5s. and 6s. a cwt.?—More than that; this year best lard has dropped over £1 a cwt.—best lard is now 34s. or 36s.—Mr. Otto Hehner was recalled, and, replying to Mr. Bodkin, said that he had heard it mentioned that he analysed samples of lard for Mr. Deacock, and he went through his books. He had never had a sample of lard from Mr. Deacock, and the name did not occur in his books?—Mr. Safford: It was not Deacock who sent it; I will write the name down.—The name was written down and handed to witness, who said he did not think there was any reason to suppress the name handed him—it was Messrs. Lovell and Christmas.—Mr. Safford: I have got a copy of the certificate given to that firm dated May 21, 1895?—Witness: Yes, I gave two certificates to Messrs. Lovell and Christmas on that day.—Mr. Bodkin: You will refer to your books?—I probably could not know anything except the marks on the samples.—Mr. Bodkin said that closed the case for the prosecution.—The case was adjourned till November 28, when Mr. Safford spoke for the defence, and in the course of a long address said no doubt his worship had recognised that the case was of some

importance to the trade. He contended that the description on the barrels, "pure bladdered lard," was entirely different to "pure bladder lard," and that the bladders which had been produced in Court were entirely irrelevant to the charge contained in the summons, which was for applying a false trade description to 44 barrels of lard. What those barrels contained had nothing to do with it. The bladders bore the words "guaranteed pure"; nothing about lard.

Mr. Bodkin pointed out that the bladders also bore the "Snowdrop" brand.

Mr. Safford, resuming, said over and over again a trade mark had been held to merely show that certain goods were those of a certain person. It must not be imagined that everything upon which the "Snowdrop" brand appeared was described as pure lard. His answer to the summons and his first defence was Section 18 of the Merchandise Marks Act of 1887, "where at the passing of this Act a trade description is lawfully and generally applied to goods of a particular class, or manufactured by a particular method to indicate the particular class or method of manufacture of such goods previous to this Act, with respect to false trade descriptions when so applied." His second defence was that the description was true, and not false, and his third that the defendant had taken reasonable precautions against committing an offence against the Act, and at the time of the commission of the alleged offence had no reason to suspect the genuineness of the description, and on demand had given all information to the prosecution.

As Mr. Safford intimated that he had several witnesses to call, the case was again adjourned.

#### LIVERPOOL CITY COUNCIL AND INFECTED MILK.

At the last meeting of the City Council, Liverpool, Mr. T. May Smith asked the chairman of the Health Committee what had been done in respect to the report ordered from the medical officer of health in August last as to tuberculosis in connection with milk and cows in Liverpool.

Alderman Cookson said the investigation was still being carried on by Dr. Hope, whose report would soon be ready and would then be presented to the Council.

Mr. Shelmerdine proposed that the proceedings of the Health Committee be approved, subject to the resolution of November 19, with reference to tuberculosis as affecting the milk supply of the city being amended, by providing that on the submission of the report to the Council it should be accompanied by a report from the Town Clerk giving full particulars of the powers possessed by the Council for dealing therewith. Mr. Shelmerdine described tuberculosis as one of the greatest scourges of civilised life. Seeing the great importance of the subject he thought something should have been done by the Council before now. (Hear, hear.) He complained of the utter inadequacy of the present system of inspection of cows, dairies, and shippens. He thought the inspection should be placed in the hands of properly qualified and fully trained veterinary surgeons. (Applause.)

Mr. Flynn seconded Mr. Shelmerdine's proposal, because this was a question which affected the life and health of the people of this city.

Mr. May Smith expressed the hope that the Council would seriously consider this question and adopt the suggestions made by Mr. Shelmerdine, as they were of vital interest and importance to the community.

Alderman Morgan informed the preceding speakers that only the previous day the chairman of the committee, Alderman J. Houlding, Mr. G. H. Ball, Dr. Hope, the city engineer, and others connected with the Corporation, were in attendance at the Local Government Board Offices, in London, and discussed this matter for three hours. This surely was evidence



that the Committee were giving this question the most careful and judicious attention and consideration.

Mr. G. H. Ball, as one of the deputation to the Local Government Board, said that from 11 o'clock in the morning until half-past four o'clock in the evening, they were discussing these matters with the Board, with the exception of an interval of three-quarters of an hour for refreshments.

Mr. Flynn: Had you any milk? (Laughter.)

Mr. G. H. Ball, proceeding with his remarks, said they were doing their utmost to bring about a proper settlement of this question. He thought there was no occasion to alarm the public, and he hoped the medical officer's report would be published as soon as possible, in order to show the measures taken to protect the community. The result of the investigation already made was that there was not a single case where milk, supplied from Liverpool, was diseased, or any Liverpool dairies where there had been found any trace of tuberculosis. There had only been two discoveries made, and in these instances he believed the milk came by railway to Liverpool from Shropshire.

Alderman Smith thought the powers possessed by the Council should be ascertained without delay.

The Chairman of the Committee accepted Mr. Shelmerdine's proposal, which was then agreed to.

#### MILK.

At Wednesbury, on November 27, Robert Ward, milk-seller, Daisy Bank, was charged with selling milk from which 23 per cent. of the original fat had been extracted.—The evidence was to the effect that an assistant of the inspector, Mr. Van Tromp, asked one of the defendant's servants, who was selling in the street, for half a pint of milk, and when the article was supplied to him nothing was said to him about its being skim milk. The price was at the rate of 3d. per quart. The analysis bore out the charge. It was admitted that five or six samples of the defendant's milk had previously been taken and analysed, and that there had never been any complaint.—The defendant said that at a time when he and his wife were confined to the house by illness, a servant, by mistake, put into the churns a bucket of skim milk, which had been intended for the calves.—A fine of £3 and costs (27s.) was imposed.

At Westminster, on December 1, James Simmons, a farmer, of St. Albans, Herts, was summoned by the St. George's (Hanover-square) Vestry for selling milk said to be adulterated with 47 per cent. of added water.—Mr. A. Gill prosecuted for the Vestry; Mr. Ricketts defended.—The defendant was in the habit of consigning milk to a Pimlico dairyman, and a sample was taken from the latter by the Vestry's inspector. As there was a warranty to it, a sample was subsequently taken by Mr. Taylor, the inspector at Victoria Railway Station.—Mr. Ricketts pointed out that the alleged addition of water was so small as to be below the standard upon which most Vestries prosecuted; that there were differences of opinion among analysts themselves as to the quantity of water in pure milk, and that Sir John Bridge, at Bow-street, had refused to convict in a case where the alleged adulteration was no more than 7 per cent. Moreover, railway servants had been convicted for tampering with milk during transit, and it was possible that if there had been a slight addition of water the defendant was quite innocent of it.—Mr. De Rutzen said he felt he must hold that the case had been legally proved, but he would take into account the fact that the defendant had been put to the expense of attending the court three times through pressure of business. He would therefore deal with it as he was entitled to—under the Summary Jurisdiction Act, and only order the payment of the costs, which he should assess at 17s. 6d.—Mr. Gill said a good deal had been said about the smallness of the alleged adul-

teration; he would be glad, indeed, if the magistrates of the Metropolis would lay down a standard which would be a guide to the Vestries.—Mr. Ricketts: Many of the Vestries have laid down the standard of 5 per cent., St. George's included, and then, for some extraordinary reason known only to themselves, they go below it.—The costs were at once paid.

At Southwark, on Dec. 2, Alfred Game, Tower-street, Waterloo-road, was summoned at the instance of Inspector Edwards, of the parish of St. George-the-Martyr, Southwark, for selling milk containing 12 per cent. of extraneous water.—The defendant pleaded guilty, and in defence urged that he sold the article as he received it.—Inspector Edwards informed the magistrate that the defendant had three times been previously convicted of similar offences, and Mr. Slade imposed a fine of £10, and 12s. 6d. costs.

At Liverpool, on Dec. 2, William Warriner, milk dealer, Belmont-road, was fined 40s. and costs for selling a pint of milk which, according to Mr. W. Collingwood Williams' analysis, had been deprived of one-third of its cream.—John Cuthbert, 48, Great Crosshall-street, was also fined 40s. and costs for selling a pint of milk which contained fifteen parts of added water.—James Fazakerley, Alexander Pope-street, was fined 5s. and costs for selling skim milk with upwards of four parts of added water. Inspector Baker proved all the cases.

#### MEAT.

At Gainsborough, on Dec. 1, Robert Jones, butcher, Gainsborough, was sent to gaol for one month for exposing for sale a quantity of beef unfit for human food, and ordered to pay costs, £2 9s. 6d., or another month's imprisonment.

At Clerkenwell, on Dec. 1, Thomas Thompkins, farmer, of Woburn, Beds, was summoned by Sanitary Inspector Billings, on behalf of the Holborn District Board of Works, for having on Oct. 21 deposited for sale at a shop in Charterhouse-street, Smithfield, four quarters of beef which were unsound and unfit for food. The meat when seized by the inspector was found to be diseased, and absolutely unfit for food. It was condemned the same day by the Clerkenwell magistrate. The defence was that the beef was intended for dogs' meat, and was sent to Charterhouse-street by an agent contrary to the defendant's instructions. Inspector Billings declared that the beef when he examined it smelt of drugs. Mr. Bros fined the defendant £50 and costs.

#### PROSECUTIONS IN SHEFFIELD.

##### MILK, WHISKY, AND SMOKE.

Six summonses were heard by the Stipendiary Magistrate (Mr. E. M. E. Welby), at the Sheffield Police-court, on December 1, which had been taken out at the instance of the Health Committee of the Corporation, for offences against the Food and Drugs and Smoke Acts. Mr. H. Sayer, Deputy Town Clerk, appeared to prosecute in each case.

##### DEFICIENT CREAM—AN AWKWARD CASE.

William Henry Dawson was summoned for selling milk which was not of the substance and quality demanded. Mr. Sayer stated that the analyst's certificate showed that the milk had been deprived of a portion of its natural fat (cream) by skimming. It contained a little more than two-thirds of the minimum proportion of natural fat laid down by the law, which is three per cent. in genuine new milk. The defendant was the servant of Mr. Chas. Sims, a milk dealer, carrying on business at 261, Hanover-street. The



prosecution would give rise to an interesting point as to the applicability of a warranty to a man servant in the position of the defendant. He had had notice that Mr. Sims had a contract with Mrs. Longden, of Winster, for the supply of pure milk. He (Mr. Sayer) relied upon the case of *Hotchin v. Hindmarsh*, in which it was held that a warranty given for the supply of pure goods could not be made to apply to a stranger to the contract.

Mr. Neal, who appeared for the defence, said the defendant merely carried round the milk for his employer, and had no means of knowing its quality. In the case quoted the judges merely held that the actual seller, although he be a servant, may be summoned and fined. Mr. Sawyer wanted to go one step further than this, and further than had ever been gone in this court. He hoped the Stipendiary would not allow him to do so, because it would work the greatest hardship, not only upon the defendant, but also upon his employer. Mr. Sims bought his milk from Mrs. Longden, with whom he entered into a contract last July, in which she agreed to supply him with pure new milk at a certain price. He would prove that the sample in question was part of this supply. His point was that the master, who was the only person who could make these contracts, had complied with the statute, and had taken care to protect his customers by obtaining a warranty of the quality of the milk. To say that this protection did not apply to a servant would be to work the greatest possible hardship. In fact, if established, it would repeal the statute completely, so far as it gives protection to the seller of milk. It was the practice in Sheffield to summon the servant, and not the employer.

Mr. Sims gave evidence, and swore that he supplied the defendant with the milk in the same condition as he received it from Mrs. Longden, and he tested it at the railway station with a lactometer, which indicated that there had been no dilution. He admitted, however, that he occasionally purchased milk from other persons, from whom he had no guarantee. The defendant also swore that he did not tamper with the milk, but sold it just as it was taken from the cans at the railway station.

The Stipendiary pointed out that what little evidence there was showed that someone was to blame, but on that account he could not see his way to make the defendant suffer. In fact, he thought the defendant ought to have the benefit of the guarantee. There was a good deal of doubt and difficulty in the case. If the master had been summoned he would most certainly have ruled that he was protected by the guarantee, and the question arose as to whether it applied to the servant. Unfortunately, the law was not clear on the subject. However, as according to the evidence, the servant sold the milk as he received it, and therefore did nothing wrong, he must hold that the protection of the master applied to the servant as well. The summons would be dismissed.

#### A HARD CASE.

German Dean, of 48, Sturge-street, was summoned in respect of a sample of milk which he sold to one of the inspectors, and which, according to the analyst's report, consisted of 80 parts of milk of the poorest quality and 20 parts of added water.—The defendant said he obtained his milk from Mr. Morley, of Bramall-lane, and sold it at a commission of 3d. per gallon. He was under no contract, and had no guarantee.—The Stipendiary told the defendant that if he had had a guarantee that the milk was pure he would have been protected.—Replying to Mr. Sayer, defendant said he took back his unsold milk to Mr. Morley, whereupon Mr. Sayer remarked that he was evidently Morley's servant.—The defendant was then put on oath, and having sworn that he sold the milk just as he received it from Morley, the Stipendiary said it seemed that Morley was

the most to blame, but defendant would have to pay 40s. and costs.—The defendant: I have no money, sir.

#### WATERED THE WRONG WHISKY.

Thomas Carrington, landlord of the Pheasant Inn, Highfield, was summoned for selling adulterated whisky. The analyst's report showed that the sample of Scotch whisky purchased by the inspector was 30.1 under proof, and there was 6.8 excess of added water.—The defendant said he had in stock some Irish whisky which was exceptionally strong, and by mistake the water intended for this was put into the cask of Scotch. Afterwards the Irish whisky was found to be in excess of the requisite strength. The offence was quite an accident.—Fined 40s. and costs.

#### AN ALLEGED SERVANT'S ERROR.

Amos Crossley, landlord of the Wellington Inn, Cambridge-street, was summoned for a similar offence, but the analyst's report showed that the whisky (Irish) in this instance was 36.7 under proof, or containing 15.4 excess of added water.—Mr. Wilson, in defence, challenged the correctness of the analyst's certificate. He said his client had been 22 years landlord of the house, and during the whole of that time there had been no complaint as to his spirits. He bought the whisky from Messrs. Duncan Gilmour and Co., and in consequence of his wife's illness he entrusted to a servant the task of diluting it. It was the defendant's custom to add a gill of water to each gallon of whisky, and if there was anything wrong it was due to the want of skill or care of this servant. Mr. Wilson also urged that if the whisky was diluted too freely it was, at any rate, in the interest of the public, whereupon Mr. Sayer replied that the law stipulated that the public should have the right to dilute their whisky themselves.—The defendant having given evidence, a fine of 40s. and costs was imposed.

#### MCDUGALLISM AND A MANCHESTER SANITARY INSPECTOR.

THE Manchester Sanitary Committee, at its last meeting, decided to discharge a sanitary inspector. The *Manchester Courier*, of December 3, records how they did it:—

"Mr. Shuttleworth maintained that the sanitary inspector referred to had had the 'dirty kick out' after 37 years' service. He reminded the Council that when Sir Joseph Heron, Mr. Page, and other servants of the Corporation got too old to perform their duty, special provision was made for them, and he thought that what was sauce for the goose should be sauce for the gander. He would move that the matter be referred back for consideration with the object of finding the inspector in question an easier occupation, even though it might be at a less salary.

"Mr. Hampson seconded the motion, which was supported by Alderman Gibson.

"Alderman McDougall defended the action of the committee, and the amendment was lost by a large majority."

We wonder if this is the self-raising flour McDougall. Whoever he may be, his kindly heart in this matter ought to be remembered. Unfortunately, it might be hard to mete out to him the justice he metes out to others.

#### STOWMARKET SEWAGE SCHEME.

THE Local Government Board have just sanctioned the loan required by the Urban District Council for works of sewerage and sewage disposal, as designed by Mr. J. Pollard, C.E., whose scheme is based on the latest improvements in sewage treatment, including Candy tanks and oxidising Polarite filters. The Council have agreed to advertise for tenders forthwith.



## IMPORTANT BREAD PROSECUTIONS.

AT Swindon, on December 3rd, Frank Edward Tanner, baker, of Station-road, New Swindon, was summoned for selling bread otherwise than by weight.—Mr. Bevir prosecuted on behalf of the County Council; Mr. A. E. Withy defended.—Ellen Davis spoke to purchasing a half-quartern loaf at defendant's shop for 2½d. She stated in cross-examination that she was supplied by Mrs. Tanner, and did not ask to have the loaf weighed.—Mr. Sam Smith, inspector of weights and measures, who instructed the last witness to make the purchase, said the loaf was ¾ oz. light.—Questioned by Mr. Withy, he agreed that bread decreased in weight by keeping.—For the defence, Mr. Withy said the Act did not require that the bread should be weighed at the actual time of selling, and he should be able to prove that at some time before the sale the bread was weighed. A second point was that there was absolutely no proof of guilty knowledge or otherwise on the defendant's part.—Stephen Brown, defendant's baker, said he weighed every loaf as soon as it was taken out of the oven.—Cross-examined: The loaves were weighed while they were warm, and they would decrease in weight as they grew cold.—Mr. Bevir submitted that the fact that the loaf was short weight was *prima facie* evidence that it was not sold by weight. He asked the Bench to pause before they decided that the weighing of the bread in its heaviest state was a compliance with the section.—After consideration the Bench decided that as the point raised by the defence was a very important one, they would adjourn their decision for a fortnight.

It was decided to adjourn similar cases against Arthur J. Greenaway and Harry Raven.

Henry Carter, baker, of Shaw, was summoned for selling a loaf of bread otherwise than by weight.—Ellen Davis said she bought a loaf at defendant's Swindon shop for 2½d., and was served by defendant's daughter.—Inspector Smith said the loaf was of the ordinary "cottage" description, and was 1 oz. 15 dr. light. It was not stale bread.—Defendant said if 2½d. was paid for the loaf it must have been fancy bread. His charge for an ordinary loaf was 2½d. He gave orders for all bread to be weighed over the counter.—Asked if he wished to call his daughter, he said he was not particular, as he would just as soon pay.—Fined £1 including costs.

Martha Parsons, of 103, Commercial-road, New Swindon, was summoned for a similar offence.—Mrs. Davis said she paid 2½d. for the loaf, and the Inspector proved that it was 14 dr. short. Defendant was not a baker, and he gathered that she obtained her bread from Mr. Carter, the defendant in the last case.—Mr. Bevir said this was undoubtedly a fact, and he left the matter in the hands of the Bench.—Defendant's daughter, who appeared, said her mother purchased the bread of Mr. Carter, and did not know she was required to weigh it.—The Chairman said defendant no doubt acted in ignorance, but the Bench were bound to convict. There would be a fine of 2s. 6d., and the costs would be remitted.

Joseph James, baker, of Regent-street, New Swindon, pleaded guilty to a like offence, and was fined £1, including costs.—The loaf in this case was 1 oz. 9 dr. deficient.

## THE SANITATION OF RURAL DISTRICTS.

THE Ludlow Rural District Council had the following letter read to them at their last meeting by Dr. Thursfield, Medical Officer of Health. The letter is a copy of one sent to the Local Government Board.

"Bank House, Craven Arms, Salop.

"November 20, 1896.

"Sir,—The condition of this densely-populated

district is horribly filthy, disgusting, dangerous, alarming, and intolerable. The only description that is adequate is that it is a vast cesspool. Thousands of cattle come and go and scatter the streets with their odour. For years these foul accumulations have been allowed to lie in the streets. This mud is churned up by the traffic, and the whole of this indescribable stuff is left to rot in the sun. On one day, a short time ago, 15,000 sheep came to this place and lined the streets with a fresh layer of these abominations. Large quantities of cattle come every week. No attempt is made to put the streets into repair or even to clear away the deposits. Where there is a pavement it is broken up and loose owing to indiscriminate vehicular and foot traffic. It is by no means a rare thing to take a step and to be smothered with a fountain of these loathsome impurities from beneath the pavement. The Board Schools stand in Market-street, the street where these offences are worst. Nearly 200 pass this place four times daily. The post-office also stands in the same street. The general market-place and market-hall are also there. I understand that certain schemes are being considered. Instantaneous and comprehensive action is what is needed. If a pestilence were to break out, it would be a matter of no surprise to one who knows the circumstances. I write this letter to your Board in order that, should any disastrous disease break out, I may be enabled to tell the public that the Local Government Board was aware of these facts. I must add that the case of the board school children is particularly painful. Out of less than 200 children, on an average throughout the week, 60 have been absent daily. Whooping cough and other disorders keep these young ones at home. They go through this mud and filth, and sit for hours with sodden feet, and then go home and fall ill. I am informed that bad throats are by no means uncommon. A tenant in Market-street tells me that his sister's daughter has had a bad cold for twelve months. It won't get well. I have sent a copy of this letter to Dr. Thursfield and the Education Department. I await your reply, and shall then determine as to publicity. This large population is tied down to the spot by necessity, and it is appalling to think of the mischief which threatens them and from which they cannot escape. I am told the streets are private.—Yours, etc.,

"C. ROBERTSON HONEY, Curate-in-Charge."

## BUTTER—A HARD CASE.

AT Smethwick on December 1, before Messrs. G. Tangye and S. N. Thompson, Phoebe Evans, of Soho-street, Smethwick, was summoned for selling butter which was not of the nature, substance, and quality demanded, being margarine. The assistant-inspector visited the defendant's shop, and saw a substance on the counter which was represented as butter. He bought ½ lb. of it at a cost of 5d., and upon analysis it was found to contain only 3 per cent. of butter.—Defendant, who said she had only been in business five weeks, pleaded that she bought the article as butter from a Mr. Feeley, of High-street, Birmingham. The latter told her it was butter, and she gave him 8d. per lb. for it. Defendant produced the invoice of the butter, and Mr. Van Tromp, inspector, pointed out that this was no warranty, and, accordingly, was no defence under the Food and Drugs Act. The Act required a specific warranty in writing.—Mr. A. H. Herbert (magistrates' clerk), said, although it was no defence, it was a mitigation of the offence.—The Bench, in fining the defendant 1s. and costs (amounting in all to £1 2s. 6d.), recommended her to try and recover the amount from the person of whom she bought the article.



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John Collier & Co., 120 and 122, Bow-road, East.  
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# Food and Sanitation.

SATURDAY, DECEMBER 19TH, 1896.

## THE CRUSADE AGAINST MARGARINE.

At the annual congress of the National Agricultural Union, held at Birmingham, a resolution, proposed by Mr. Cruickshank, and seconded by Mr. R. R. B. Orlebar, was carried in favour of amending and strengthening the laws against the adulteration of food. Mr. Orlebar mentioned, as among the devices which had been suggested to the Council for putting down the improper sale of margarine, a proposal that the substance should be coloured green or red. (Laughter.) He would not go so far as that, but he certainly thought that dealers in margarine ought to be compelled to stick to one colour and to refrain from trying to make it look exactly like butter. A nice, innocent pure white would do as well as anything. The President expressed

his agreement with Mr. Orlebar and other speakers in the view that if the Government wished to benefit the farmer it must put its foot down upon a system under which foreign produce and foreign meat might be sold as British. The success of the attempt they were now making to re-enter their own markets on fair terms depended on the Government coming forward and putting a stop to this wholesale system of dishonesty and fraud.

At West Ham, on December 9, George Hunt, provision merchant, of 2, Zingari-terrace, Gipsy-lane, Forest-gate, was summoned for selling adulterated butter.—On November 4 one of the West Ham inspectors entered defendant's shop and asked for half a pound of butter. He was served from a block labelled "Pure butter at 1s," but when a sample of the substance was analysed, it was certified as being margarine, and to have no traces of the fatty constituents of butter. The defendant's manager said one of the assistants on that morning was making "a basket of flowers" for exhibition, with the margarine, and he must have served from the wrong block. They had pure butter at 1s. per lb. Mr. Baggallay imposed a fine of £3, and 25s. 6d. costs.

At Bow-street, on December 9, Emily James, of High Holborn, was fined 30s. and costs, for selling butter adulterated with 80 per cent. of foreign fat, and ordered to pay the cost of the summons charging her with selling unlabelled margarine.

At North London, on December 5, Alfred Thickbroom, of Shacklewell-lane, was summoned for selling as butter an article which was found to be adulterated with 70 per cent. of foreign fat. And he was also summoned for exposing margarine for sale without the regulation 1½in. letters announcing that it was margarine. Samuel Punter, inspector under the Food and Drugs Act, in the employ of the Hackney Vestry, said he sent his daughter to the defendant's shop for half a pound of "butter," and she was served from a portion which was found upon analysis to be a very small proportion of butter. The defendant said it was all a mistake. The margarine label had slipped off, and his assistant had served it by mistake. The inspector added that the label which the defendant had was so washed that the letters were almost obliterated. There were faint blue lines of the letters upon a white ground. Mr. Paul Taylor: Evidently an attempt to evade the law. The defendant replied that it was no such thing. The letters were perfectly legible, and the inspector told him he might make a test case of it if he liked, to which he (defendant) replied that he had no money for test cases. The inspector now added that the defendant had already been fined for exposing margarine without a label. Mr. Paul Taylor said he looked upon this as a very bad case, and fined the defendant 40s. and 12s. 6d. costs in one case, and 40s. on the second.

At Ashford, on December 8, W. G. Denness, grocer, Beaver-road, South Ashford, pleaded not guilty to summonses charging him with selling adulterated butter, and with selling margarine without being labelled as such.—P.C. Aldridge deposed that he visited defendant's shop on November 3 and saw a lad behind the counter. He asked him for a pound of butter. The lad said, "What price?" Witness said, "What price have you got?" and the reply was, "1s. and 1s. 2d. per pound." Witness then asked for a pound of 1s. butter. The lad went to the lower end of the shop and from behind a cupboard brought back the article, for which he paid 1s.—In reply to Mr. Denness the witness stated that he first of all asked for a pound of butter, and the lad then asked him what price.—Superintendent Bailey produced the analyst's certificate, which stated that the sample contained 18 parts of butter and 82 parts of foreign fat.—The same evidence was given in the second case, P.C. Aldridge adding that the margarine was not labelled.—Mr. Denness, in defence, stated that he had repeatedly cautioned the



lad not to sell the margarine as pure butter. The margarine was labelled with the plate produced, and the margarine papers, also produced, were at hand and could have been used by the lad. The latter, Mr. Denness explained, was left temporarily in charge of the shop during his absence.—The Bench retired, and, upon their return, Mr. Cameron said the case was a bad one, and defendant would be fined £5, with 10s. costs, on each summons.—£11 in all.—The Bench declined to allow time for payment, and the Chairman stated that in default of distress defendant would be committed for one month's hard labour in each case.—Mr. Denness asked if he was responsible for the action of his boy, and the Chairman replied, "Certainly."

A WIMBLEDON grocer, Edward William Roden, was fined £6 18s. on Dec. 2, for having sold adulterated butter, and, further, for having sold margarine without a label.

### THE ADULTERATION OF RUBBER.

RUBBER is not a drug in the market in these days, and tyre manufacturers would do well to keep an eye on Lagos. Adulteration is an art not unknown either to the black man or the white, but to expect from the negro scrupulous honesty after all we have taught him seems rather hard on the noble savage. He purchases (says the *Lagos Standard*) cloth in which he finds more pipeclay than cotton, and he has often complained of the difficulty experienced in getting this cloth to take water, and when eventually the clay with which it is bedaubed is washed off, he finds only a thin transparent gauze sheet in the place of the heavy cotton cloth which it appeared to be when bought. But when our defrauded customer tries to cheat us by adulterating his rubber his produce is confiscated, fines are imposed, and efforts are naturally made to divert the trade. To quote an extract from our African contemporary—"A man brings down, say, two hundredweight of rubber with 20 per cent. of adulteration; the whole of his rubber is seized, and he is fined in the bargain and sent away indebted to the producer. This is hardly fair enough. The consequence is that at the last Ejirin market the news soon reached the caravans coming from the interior, the majority of whom returned without reaching the markets. It is also a fact that a large quantity of the kernels which generally come to Lagos are being taken towards Porto Novo overland by the Egbas, who have suffered so much, and whose absence some are foolish enough to charge to the Ilorin blockade. I hope the Government will find out in time that a fine is sufficient, and that confiscated kernels and, perhaps, rubber, may make good fuel for the Government workshops, but that it is wiser to buy wood or coal for this purpose than to drive away, in any of its branches, the trade upon which the Government itself depends, which act may turn out to be an indirect way of muzzling the ox which treadeth out the corn.—*Leeds Mercury*."

### ADULTERATION OF SPIRITS.

ON Wednesday, December 2, at Goole (West Riding) Court, before R. Creyeke (chairman), The Honourable A. F. Hood, J. Taylor, Esq., J. Huntington, and F. Hartman, Esq., Thomas Tune, innkeeper, Swinefleet, was charged with selling to Inspector W. H. Wilson, of Pontefract, half-a-pint of brandy 33 degrees under proof. He pleaded guilty, and was fined £1, to include costs.—James Briggs, of Rawcliffe, pleaded guilty to selling gin 44.2 degrees under proof; fined £1, to include costs, and rum, 26.8 degrees under proof, 10s., to include costs.—William Nicholson, of Rawcliffe, pleaded guilty to selling rum 42.7 degrees under proof, fined £1 10s., to include costs; whisky, 31 degrees under

proof, fined £1; and brandy, 28.6 degrees under proof, fined £1, to include costs.—John Boddy, of Rawcliffe, pleaded guilty to selling whisky 41.7 degrees under proof, fined 30s.; gin 45.7 degrees under proof, fined 25s.; and rum 43 degrees under proof, fined 25s., all to include costs. This defendant acknowledged the Public Analyst's certificates to be correct, as he had had the samples left with him analysed. The chairman, R. Creyeke, Esq., wished to inform traders that their licences were liable to be endorsed on a second offence, and would advise traders to put notices up in their houses as they would then not be liable to prosecution by anyone. In addition to this advice to traders how they might defraud the public and defy justice, Mr. Creyeke said the inspector would be better engaged looking after bad rabbits, butcher's meat, fish, tinned meats, etc. We believe Mr. Creyeke is the owner of two public-houses whose landlords were prosecuted, and if such be the case we do not understand why he sat on the bench in these cases. We do not mind giving him a little advice, viz., to leave magisterial duties to others who have a truer appreciation of the duty magistrates owe to the public. It is no part of a magistrates' duty to instruct people how to plunder the public with impunity.

At the Gainsbro' Police Court, on December 1, George Sparkes, landlord of the Crown and Anchor Inn, was summoned by Superintendent Edgley, inspector under the Food and Drugs Act, for selling whisky below the strength required by law.—Superintendent Edgley spoke to obtaining a pint of whisky from defendant on the 7th ult. for 2s. 6d. He divided it into three portions, labelled it, and leaving one with the defendant, sent one to the county analyst, whose certificate showed that the sample he received contained proof whisky 62.8, water 37.2. That was 37.2 degrees under proof. It was diluted with water 12.2 degrees below the legal limit.—Mr. P. A. Gamble, who defended, called Mrs. Sparkes, who said her husband had been up nearly all night brewing, and she "let down" the whisky, and being in a hurry to catch a train did not use the hydrometer.—The chairman said it was a bad case, and the defence was the defence they generally had. It was an accident. It always was. A county analyst would tell them there were very few accidents upon the other side. The public must be protected, and must have what they asked for. It was nonsense playing with the Food and Drugs Act, and he—and his colleagues agreed with him—would not be a party to imposing paltry fines. The penalty would be £5, and costs 4s. 6d.

At Hanley County Police Court, on Nov. 27, Thomas Whitty, landlord of the Star Inn, Hanley, was charged under the Food and Drugs Act with selling a quantity of Irish whisky not of the nature, substance, and quality of the article demanded by the purchaser, the same having been adulterated with added water, on Oct. 7.—Mr. Stokes (instructed by Mr. A. Challinor) prosecuted; and Mr. E. A. Paine was for the defence.—Mr. Stokes stated that the whisky was diluted, according to the analyst's certificate, with 16.84 per cent. of added water. On the date mentioned Inspector Salt visited the inn, and asked for a half-pint of Irish whisky. Defendant's son was behind the counter, and supplied him. The inspector told him the whisky was for analysis, and divided it into three parts. The analyst's certificate stated that it contained 83.16 per cent. of whisky, or 25 degrees under proof, and 16.84 per cent. of added water.—Mr. Paine raised a technical objection, stating that no offence was disclosed in the summons, as it was not an offence against the law to add water to whisky up to a certain point.—The Stipendiary upheld the objection, and, with Mr. Paine's concurrence, the summons was amended, the defendant being charged with selling whisky diluted to the extent of 16.84 per cent. beyond the statutory limit.—Mr. Paine then submitted that the certificate was bad, but the Stipendiary, whilst admitting that it was badly



expressed, over-ruled the objection.—On the merits of the case, Mr. Paine did not deny that an offence had been committed, but explained that the defendant had only recently taken the public-house. When he came into possession he had little stock to take to, and included in that was a little over a pint and a-half of whisky. Everything was in confusion when the inspector called, and the new supplies of spirits had not arrived. On discovering that the whisky was not of proper strength the defendant emptied it down the sink, and no more was sold.—The Stipendiary, under all the circumstances, imposed a fine of 20s. and costs.

Two Swansea publicans were charged with selling adulterated spirits on December 1. Mr. Harris, Glamorgan Arms, High-street, who proved that his testing apparatus was out of order, got his case dismissed; but Henry Hopkins, Union Inn, Port Tennant, was fined 20s. and costs. Five other cases were adjourned.

### IMPORTANT APPEAL CASE.

JONES v. THOMAS.

In the Queen's Bench Division of the High Courts of Justice, on December 9, before Mr. Justice Wills and Mr. Justice Wright, sitting as a divisional court—a special case for the opinion of the Court on a point under the Sale of Food and Drugs Act, 1875, and in connection with a sale of rum diluted by water in excess of the amount permitted by law, was submitted by Mr. H. R. E. Childers on behalf of the appellants. From counsel's statement it appeared that an information was laid before the justices of Glamorganshire under Sections 38 and 39 of the Act by Evan Jones, Pontypridd, an inspector under the Act, against Edwin Thomas, of Porth, innkeeper. The information charged Thomas that on May 25 last he sold to a constable a bottle of rum, which was not of the nature, substance, and quality of the article demanded, but was rum mixed with 72·86 per cent. of water and extractive matter. The case was heard at Pontypridd on June 24. The justices, being of opinion that the affixing of a notice was a sufficient protection to the publican, dismissed the information, and the inspector appealed. Mr. Childers submitted, as the most important point, that a notice stated to be fixed and visible in a public-house bar was not a sufficient protection to the seller.—Mr. Justice Wright at once assented, saying: Clearly not; under the section to which they refer it should have been fixed to the bottle.—Without further hearing, Mr. Justice Wills gave the decision of the Court. He said that the case must go back to the magistrates for further inquiry to ascertain whether the customer was prejudiced, and with an intimation from this court that Section 8 was not complied with. There also remained the question whether the purchaser had notice. This court could not decide that, and the justices must inquire into it. Both the questions of law were answered in the negative, and the case goes back to the justices. No costs of this appeal were allowed.

At Rye, on December 9, Thomas Ellis, of the Robin Hood, Icklesham, pleaded guilty to selling gin reduced to 39½ degrees under proof strength, or 4½ degrees beyond the maximum allowed.—Defendant said he kept the spirits in a damp cellar, and it had lost strength before he "broke it down."—A previous conviction was proved, and defendant was fined £3 with 10s. costs.

### WHISKY.

At Belper, on December 3, John Hunt, licensed victualler, was charged with selling adulterated whisky, on October 31. Captain Sandys, the inspector, said he visited the King's Head, kept by the defendant, and

purchased some whisky. The analyst's certificate showed 94 parts of whisky and six under the proper standard. There were six parts of added water. Defendant said the spirits were made up in a hurry, and was the same as it always had been. A fine of 10s. and costs was imposed, there being no defence.—Edward Richard Milward, of Belper Market-place, licensed victualler, was charged with a like offence, on the same date. In this case there were 27·6 parts of water, or 2·6 under proof. Fined 10s. and 21s. costs.

At Dublin, on December 8, before Mr. Keys, James Healey, licensed vintner, 19, Constitution-hill, was summoned by the Corporation for having, on November 13, sold a half pint of whisky adulterated with 29·33 per cent. of water, reducing it to 47 degrees under proof, 25 degrees under proof being the minimum strength allowed by statute. Sir Charles Cameron's certificate was produced in sustinment of the charge, which was proved by Inspector Kane. There was no appearance for the defendant. Mr. Keys said during the fifteen years he was on the bench this was the first case of whisky adulteration that had been brought before him. This was a very bad case. He could not impose a less penalty than £10. A similar summons was brought against Frederick Jones, publican, 26, Lower Abbey-street, for having supplied to Inspector Kane, on November 3, whisky which was adulterated by the addition of 11·6 per cent. of water, being 33·7 under proof. Sir Charles Cameron's certificate was also handed in in this case. Mr. M. C. O'Meara, solicitor, appeared for the defendant, and admitted the facts, but said that his client was engaged in another business, which he now intended to give up, in order to superintend his public business more carefully. Mr. Keys said this case was not so bad as the last. He would impose a fine of £2. Mr. Rice, Assistant Law Agent, appeared for the Corporation.

### WHISKY AND THE NOTICES.

At Lambeth, on December 3, a trader was summoned by the Camberwell Vestry for selling whisky 29·9 degrees under proof, being 4·9 degrees below the legal standard of 25 degrees.—Mr. G. W. Marsden appeared in support of the summons, and Mr. Wm. Ware (Messrs. Maitlands, Peckham and Co.) represented the defendant.—The defence raised was that the defendant was protected by a notice exhibited in the bar to the following effect: "All spirits sold at this establishment are diluted, but not below half-proof strength." As to this notice, Sanitary-inspectors Kerslake and Chadderton, who purchased the whisky, declared that all they could see was a frame with a number of bottles in front of it.—The defendant's barmaid said the notice was behind some bottles, but the bottles were two or three inches apart, and the notice could be seen.—Mr. Denman came to the conclusion that the notice was not conspicuously exhibited, and said that he should hold that in this case the purchaser did not have notice.—The defendant would have to pay a penalty of £5 and costs.

### FRUIT.

At Worship-street, on Dec. 2, Isaac Weinberg, of Bell-lane, Spitalfields, for offering for sale a quantity of apples unfit for human food was, on the information of Sanitary-Inspector Cook, Whitechapel Board of Works, fined 20s. and costs.

THE Warwickshire C.C. are inviting the opinions of local authorities as to the advisability of transferring the duty of taking samples for analysis under the Food Adulteration Acts from the sanitary inspectors to the inspector of weights and measures, the salary of the latter being increased from £400 per annum to £600.



## THE QUALITY OF ARMY MILK.

THE Commander-in-Chief has issued an order the object of which is to ensure that the milk supplied to the troops shall be pure and of good quality. Before any contract is made by the commanding officer, the sample must be approved by the medical officer in charge of the barracks. It is also to be a condition of any agreement that the medical officer may, without giving notice, visit the farm from which the milk is supplied, to inspect the surroundings of the dairy and the water used in washing the pails, as well as to inquire into the manner in which the cows are stabled and fed. By way of further precaution, a sample of the milk supplied must be sent by the commanding officer to the station hospital weekly, with a view to its quality, specific gravity, and the percentage of cream being ascertained. Lord Wolseley has no intention of being humbugged by the Somerset House standard and the frauds it encourages.

## MILK.

At Thames, on December 9, for selling milk adulterated with 13 per cent. of water, Arthur Bruce, of 173, High-street, Poplar, was fined 20s.

At Linlithgow, on December 7, Robert Burnside, dairyman, Rosemount, Linlithgow, pleaded guilty to supplying James Bamberry, sanitary inspector for the burgh at Linlithgow, with 2d. worth of sweet milk not of the nature and substance demanded, in respect that it contained 10 per cent. of added water. A fine of £3 was imposed.

## HELPING THE COW.

A VERY unpleasant incident is reported as having occurred recently at a Colonial agricultural show, in connection with a competition for a prize medal presented by His Excellency the Governor, for the best butter-making cow. Whilst the milking was going on, one of the stewards noticed cream dropping from the sleeve of the man in attendance on one of the cows entered for the competition. On making closer investigation, he found that this individual had a baby's feeding bottle, containing about 1½ lb. of cream, under the breast of his coat, an indiarubber tube being attached, through which the cream passed down the sleeve of the coat and into the milking bucket. The exhibitors of the cow were, of course, promptly disqualified for all the sections in which they had entered.

## MEAT.

At Buckie, on December 7, Alexander Conn, jun., butcher, Bridgend, pleaded guilty to having exposed for sale in his shop 22 pieces of diseased meat. This is the first case of the kind in the burgh, and the magistrates imposed a penalty of £2 10s. or 30 days' imprisonment.

A CHISLEHURST butcher named Jacob Paternoster was fined £30 and costs at Bromley Petty Sessions on December 7 for exposing a quantity of diseased meat for sale.

## ADULTERATED MUSTARD.

At Manchester, on December 9, a fine of 5s. and costs was inflicted on Cephas Gradwell, of Henry-street, for selling mustard which contained 15 per cent. of wheaten starch. For a similar offence John Ryder, of Lower Moss-lane, was also fined. Mr. Rooke, superintendent of the Sanitary Department, Manchester Town Hall, prosecuted.

## PRESERVED PEAS AND COPPER.

At the Isle of Wight County Sessions, on December 5, the adjourned summonses against Mr. Samuel J. Lane, grocer, Ventnor, and Mr. Maurice Dear, jun., grocer, Shanklin, were heard.—The case against Mr. Lane was taken first, the offence alleged being that of selling peas adulterated with 1·7 grain of sulphate of copper to the pound.—Mr. John C. Mould defended, and argued that such a very small proportion of copper was not absolutely injurious. The analyst himself only stated "that it was most objectionable, if not positively injurious to health." He did not say it was injurious.—Dr. Castle said that 1·7 grain of sulphate of copper in a pound of peas was not injurious to health. It would be injurious if there were ten or twenty grains.—The Magistrates' Clerk: Would it not depend upon the state of the eater?—Witness: Well, it would probably finish him if he were dying? (Laughter.)—The Clerk: The one or the twenty grains?—Witness: Oh! the twenty.—The Chairman said the information would be dismissed, but he himself thought it a misfortune that a conviction had not followed.—The summons against Mr. Dear was withdrawn.—Mr. Marsh (who defended for Mr. Dear) said he did not think he was called upon to reply to the Chairman's observations, but were he to do so he thought he should be able to show that the decision given was perfectly right.

## MANCHESTER CHAMBER OF COMMERCE AND THE FOOD PRODUCTS ADULTERATION.

UPON presentation of the minutes of the Produce Sectional Committee, it appeared that considerable attention had been given to the report of the Select Committee of the House of Commons on this subject. A proposal of the former body was adopted by the Board, to the effect that an inquiry should be addressed to the Local Government Board as to the intention of Her Majesty's Government with reference to fresh legislation on the lines of the report. In the event of such legislation being contemplated, the Produce Sectional Committee would be willing, on behalf of the Chamber, to prepare suggestions for amendments of the law founded upon the extensive experience of its members of the working of the Food and Drugs and Margarine Acts, especially with reference to the sale of butter.

## CAMBERWELL VESTRY AND ADULTERATION.

MR. FRANK L. TEED (public analyst) reported that during the quarter now ended 45 samples of food had been purchased by the vestry's inspectors and submitted to him for analysis. Of these samples 13 were adulterated, giving a percentage of adulterated samples of 28·9. The percentage still remained very high, in spite of the publication of the names of second offenders.

## IMPORTANT CASE AT NEWPORT AGAINST EASTMANS', LIMITED.

At Newport, on November 30, before the Mayor, Mr. T. Goldsworthy, Mr. W. Graham, and Mr. J. R. Richards, Francis Sheppard (manager of Eastmans', Limited, butchers, 73, Commercial-road), and George Peebles, salesman, were summoned for having in their possession, and exposing for sale, seven pieces, and twenty-one pieces of salt beef, which were unfit for human food.—The Town Clerk (Mr. A. A. Newman) appeared for the prosecution, and Mr. W. L. Moore for the defence. When the case was called on, Mr. Moore applied for a fortnight's adjournment, in order to allow



an independent examination of the meat to be made. He stated that the summons was only served on Saturday, and that he was not instructed until that evening. He then communicated with the Town Clerk, apprising him of his intended application, and asking that the meat should not be destroyed.—The Town Clerk stated that the meat had not been destroyed, but he opposed the application on the ground that an analysis was not necessary. The prosecution did not allege that the meat was diseased; they simply said it was unsound, and that the meat could easily be tested by the nose.—Mr. Moore mentioned that the defendants were liable to penalties amounting to £560, and, in view of the seriousness of the case, he considered his application should be granted. The magistrates, after consultation, decided that the case should go on.—Mr. Moore applied for an adjournment of two hours, but the magistrates demurred, and then Mr. Moore said he would leave the case for the prosecution.—Mr. Newman: Do I understand you throw down your brief.—Mr. Moore: Yes, if the case is gone into immediately.—Eventually, the case was adjourned for three-quarters of an hour.—Upon resuming, Mr. Moore applied for an adjournment, in order to call certain necessary witnesses.—The Magistrates, however, declined this application.—Inspector Jones said he visited the shops of Messrs. Eastman, on Thursday afternoon last, and examined certain pieces of salt beef, which were placed on a block near the door and had a ticket upon them marked “2½d.” The meat was putrid and stinking, and was turning green. Witness spoke to Peebles, who said the meat was the same as when it came from the High-street shop. Witness seized the meat, and asked Peebles to allow it to remain until he fetched Dr. Howard Jones, the medical officer. When he returned, he noticed that there were seven instead of six pieces of meat on the block, and that a piece of the neck was missing. He made a search and found this, together with twenty-one other pieces, in a bag at the back of the shop. The medical officer examined the meat, the total weight of which was 148lb.—In reply to Mr. Moore, witness said he did not regard the twenty-one pieces as exposed for sale, but he had no doubt that they were deposited for sale. They were freshly cut, and had, in his opinion, only just been put in the sack.—Pressed upon the point witness adhered to this opinion, and the Town Clerk explained the inference of the prosecution was this—that after the inspector went for the medical officer, the man in charge of the shop put the twenty-one pieces in a sack, which he placed in the back yard.—Witness, in further cross-examination, said the whole of the meat was putrid and stinking. All day it was turning green, and it exuded “a sulphur-like smell.” Only two pieces of meat were submitted to the magistrates, who signed an order for destruction of the twenty-eight pieces.—Assistant-inspector Smith said that in consequence of a communication from the last witness he went to Messrs. Eastman’s shop on Thursday afternoon. When he went into the shop Peebles and his assistant, a youth named Jenkins, were putting something into a bag, which was taken into the yard. Witness asked what they had put into the bag, and Peebles replied, “Old bones.” Witness remained at the shop until the medical officer arrived, when the contents of the bag were turned out, and were found to be 21 pieces of meat.—Dr. J. Howard Jones, medical officer, said he examined each piece of meat, which, in his opinion, was unfit for human food. It smelt sour, and was evidently in the first stages of decomposition. He also tested the meat and found it to be slightly acid. He condemned the 21 pieces of meat in the bag, some of which, he thought, had only just been put in.—In cross-examination, he stated that the whole of the meat was unwholesome. He applied litmus paper to the surface of the meat, and found a certain degree of acidity.—In defence, Mr. Moore urged that there was no case against Mr. Sheppard, who was

the superintendent of the eight shops which Messrs. Eastman had in Newport.—The Bench dismissed the case against Mr. Sheppard.—With regard to Peebles, the manager of the shop, 73, Commercial-road, Mr. Moore called Mr. George Thompson, analyst to the Monmouthshire County Council, who said that he examined some of the brine in which the meat was pickled, and found it to be perfectly sweet and wholesome. He had seen the meat that day, and found that some of it was quite wholesome. Other pieces were affected, but the condition of these might have been aggravated through being shut up for three days in a badly-ventilated room.—In the end the Bench fined Peebles £5 for exposing the meat and 20s. for depositing the 21 pieces for sale.

#### OLEO OIL AS A COOKING FAT.

Is there a more clean and wholesome fat than the so-called oleo oil, made from the best caul or abdominal fat after same has been carefully washed immediately after the animal is slaughtered, and which is then, after being chopped, chilled and macerated, dissolved by steam to an oily mass of a partially solid granulated substance of a pale yellow colour, without distinguishing taste or odour? After this process it was ladled into linen cloths and spread upon metal plates in powerful presses, whence emanates the pure, wholesome and clean oleo oil. Why do our packers and slaughterers not make any attempt to sell that cleanest and best of fats in unadulterated form as a cooking and baking fat? We believe a ready sale could be made and a demand created for pure ox fat, and that it would rapidly take the place of butter in many instances, while the pretext of impurity or unwholesomeness now often laid at the door of butterine would not hold. Farmers would see it to be to their interest to encourage the sales of this fat and then could not go before their Legislatures asking them to prohibit the sale of it without hurting their own pocket more than any one else’s.—*National Provisioner.*

#### THE YORKSHIRE RELISH CASE.

In the Appeal Court, on December 2, an *ex parte* application was made by Mr. McLean on behalf of the Birmingham Vinegar Company, in the case *Powell v. The Birmingham Vinegar Company*, for leave to appeal from an order made in Chambers by Mr. Justice Stirling. Mr. McLean explained that Mr. Powell was the representative of Goodall, Backhouse and Company, of Leeds, and had brought an action against the Birmingham Vinegar Company for an injunction to restrain them from using the words “Yorkshire Relish” in such a way as to mislead the public in purchasing goods of the defendants for those of the plaintiffs. The injunction was granted, and the Court of Appeal upheld the decision. An appeal was now pending in the House of Lords. In the meantime the plaintiffs had taken out a summons before Mr. Justice Stirling, asking that the defendant company should supply an account of profits and list of customers in order that they might go to the defendants’ customers and see how much they had ordered of the defendants’ goods. It was against that order that he (Mr. McLean) wished to appeal. The leave was granted.

#### TO ANALISE CALF LYMPH.

At Mile-end Vestry, Mr. Warren asked if the Clerk was in a position to inform the Vestry as to whether samples of calf lymph could be taken and analysed under the Food and Drugs Act. The Clerk said the matter had not been referred to him, but if the Sanitary Inspectors applied to him for advice on the subject he should advise them that samples could not be taken.



## BEER-BARRELS AS MEASURES.

## IMPORTANT PROSECUTION.

JOHN HENRY FIELDER, of Malmesbury, and Howard Horsell, of Wootton Bassett, were summoned as receiver and brewer respectively to the Swindon and North Wilts Breweries, for using for trade seven barrels which were severally deficient in capacity on divers dates between June 16 and August 6.—Mr. Bevir prosecuted on behalf of the County Council; Mr. H. Kinneir represented Mr. Fielder; and Mr. E. B. Titley, of Bath, defended Mr. Horsell.—Mr. Titley took a preliminary objection to the form of the summons, on the ground that as defendants were not partners in business they could not be charged jointly. If they were so charged considerable injustice might be done to either, as neither could give evidence in their own defence; but if they were charged separately each might give evidence on behalf of the other. He offered no objection if Mr. Bevir would agree to the cases being so far dealt with separately as to allow of each defendant being called on behalf of the other.—Mr. Bevir consented to this course being adopted. He then proceeded to open the case, mentioning that the proceedings were taken under the 25th section of the Weights and Measures Act, 1878. The seven barrels in question had been tested by the Inspector, and the result was as follows: Four were one gallon or upwards of a gallon short, one was just under a gallon short, and two were less than a half-gallon short. He did not know whether or not it would be contended that a barrel was not a measure, but he asked the Bench to bear in mind that a barrel was a standard measure. It was perfectly clear that no imperial or stamped measure had been used in filling the barrels. Explaining the position of defendants, Mr. Bevir said the business was carried on by a limited company under the title of the Swindon and North Wilts Breweries, Limited. That company was an amalgamation of Mr. Horsell's business with another business in this neighbourhood, and Mr. Fielder had been appointed by the Chancery Division receiver under a debenture-holder's action brought in the name of Mr. Vaughan against the company. As such, Mr. Fielder had since carried on the business.—Mr. Kinneir: I don't admit that.—Mr. Bevir said Mr. Fielder as receiver would take possession of the brewery and its effects, and he thought it would be shown that he was really the person who was carrying on the business. Mr. Horsell had been at the brewery from the outset because it was his property before it was taken over by the company; and it would be for the Bench, after hearing the evidence, to say whether Mr. Fielder did not carry on the business.—Inspector Smith stated that on September 3 he tested eight barrels which he found at the Bell and Shoulder of Mutton Inn, Old Swindon. One of those casks was so leaky that it was not capable of being tested, but he tested the other seven, with the result given. All but two bore the name of Mr. Horsell, and the others were stamped with the initials of the company. He afterwards visited the brewery and saw how the casks were

filled. This was done by means of a pipe from the vat, but the cellarman told him no measure was used. He saw Mr. Horsell, who agreed that that was the case.—By Mr. Kinneir: This was the first case of the kind he had taken, and he supposed it might be regarded as a test case. His contention was that the barrel was a measure within the meaning of the statute—as they were being used. He had no standard measure for a barrel, but it would be legal for him to test a barrel by means of gallon measures. He had never been called upon to stamp a barrel. If it were used as a measure it should, undoubtedly, be stamped as a measure. It was not possible for a brewer's cask to be maintained at any particular capacity for any length of time, but it should be re-measured and re-branded. This would, of course, increase inspectors' duties, and give more trouble to brewers. The barrels in question came under his notice in consequence of a complaint he received—in a measure accidentally. The whole of the barrels were in the cellar at the Bell and Shoulder of Mutton Inn; he did not notice whether they were old or new. He agreed that as the age of a cask increased its capacity would probably decrease.—By Mr. Titley: He was aware that until the business fell on bad times it belonged to the company, and Mr. Horsell was nothing more than manager. It had not come to his knowledge that a number of full casks in the cellar when he visited it were above measure. The only indication of measurement was the number "36," and that only appeared on one. He agreed that exposure to the weather would have an effect on the casks. Mr. Horsell told witness that the company had supplied the landlord of the Bell and Shoulder of Mutton Inn with a number of casks which were over measure, and that on the whole the balance was in his favour. He did not know that the Board of Trade had ruled that barrels were not measures; as a matter of fact, the Board had not made any rule at all. He had never applied for permission to inspect the company's barrels; if he did so he would be exceeding his duty. In his eyes it was just as much an offence for a barrel to be in excess of the actual measure as for it to contain less than the proper quantity.—John B. Land, landlord of the Bell and Shoulder of Mutton Inn, said he was supplied with beer from the Wootton Bassett Brewery. He produced a number of receipts signed "H. Horsell," while one was signed by Mr. Fielder, who took the money at the witness's request.—By Mr. Kinneir: He did not complain to the inspector that the barrels were not full measure. Some of the barrels which Mr. Smith examined were in the yard. He afterwards complained to Mr. Horsell that the barrels had not contained all for which he had been charged. He received a reply worded as follows: "We have just discovered we have been sending you considerably over measure, one cask alone holding nine pints more than the express measure." Witness measured some of the barrels which he subsequently received, and found that they contained more than the stipulated quantity.—By M. Titley: To the best of his knowledge the whole of the receipts were signed by

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Mr. Horsell's son.—Re-examined: After the seizure of the barrels by the inspector he received a bill charging him for the empties. He had not previously been charged for them.—Robert William Hyler, clerk at the Wootton Bassett Brewery, said he was engaged directly after the formation of the company, and about twelve months before Mr. Fielder's appointment as receiver. It had since been carried on by Mr. Fielder as receiver and manager, and by Mr. Horsell under him. Mr. Fielder was usually at the brewery about once a week. Witness took instructions from both Mr. Fielder and Mr. Horsell. The money which was received from customers would be paid into the bank to Mr. Fielder's account.—By Mr. Titley: Employés were discharged, he understood, at the direction of Mr. Fielder. The receipts were paid exclusively into Mr. Fielder's account, and were in no way credited to Mr. Horsell.—This concluded the case for the prosecution, and Mr. Kinneir said he did not know whether it would be convenient to take the ruling of the Bench as to which, if either, of the defendants was liable. It occurred to him that undoubtedly Mr. Fielder's duty was to take care of the accounts, etc., and take possession of the effects, but he did not think that it was part of his duty to carry on the business of the brewery in the strict meaning of the term.—Mr. Titley followed by arguing that whether or not an offence had been made out against the Act, Mr. Horsell could not be convicted. The Act stated that "every person who uses or has in his possession for use for trade any measure which is false or unjust shall be liable, and inasmuch as unfortunately under the Act no definition was given as to what the term "every person" meant, it was for the Bench to construe those words and to say what they meant. The word "person" was explained as applying to a body corporate, and the Act therefore contemplated the charging of that particular offence against the company who carried on the business.—It was not the manager or the assistant who used the articles; it was the proprietor who used them, and it was he who took the profits. Mr. Horsell had not for years been proprietor of the business, and had had no control over it except such as he had derived from the authority dedicated to him from time to time by those who were. Mr. Horsell was only the servant of Mr. Fielder; and his name did not even appear on the bill-heads. It was nothing to him whether or not Mr. Land received over or under measure. No one regretted more than he (Mr. Titley) Mr. Fielder's position, and it was a very hard thing that he should be liable; but under the order of the Court he was in the position of proprietor of the business, and therefore actually had the articles in his possession. He contended that Mr. Horsell ought not to be made responsible in a matter in which he really, except as a servant, had no concern.—Replying on behalf of the prosecution, Mr. Bevir said the argument of his friend went to show that not only were defendants not liable, but that the company was liable. He (Mr. Bevir) entirely dissented from any proposition that the two gentlemen were not both liable to be convicted; it was well known that both master and servant might be convicted for the same offence. With regard to Mr. Fielder's position, he was in possession, not on behalf of the company, but as manager for the debenture holders. He argued most distinctly that the company did not carry on the business from the time of Mr. Fielder's appointment, but that Mr. Fielder acted on behalf of the debenture holders. With respect to Mr. Horsell's position, he seriously contended that there was absolutely nothing to prevent the conviction of the manager—a manager who was left in sole and responsible control of the business.—The Bench, having expressed a wish to hear the whole of the case before deciding, Mr. Kinneir addressed them on the other aspect of the case. He remarked that to regard a barrel as a measure of itself was, to his mind, rather an absurdity, for, seeing that wood was liable to warping and shrinking, it could not be relied on as a measure.

The prosecution asked the magistrates to say that every barrel used by every brewer in the kingdom was a measure. There was an honourable understanding between brewers and publicans that a give-and-take system should be adopted. Mr. Land had not been charged for his beer by barrels; he was charged for gallons. If a barrel was to be a measure for the protection of the public, the first duty of the inspector would be to see that a proper measure was used. If inspectors were to be set in motion and visited all the great breweries there would be a thousand convictions against the brewers for having in their possession barrels used as measures, because some would be in excess of the stipulated quantity and some would be deficient. There was no suggestion of fraud against either Mr. Horsell or Mr. Fielder. It was clearly an accident which occurred in the ordinary course of trade between brewers and their customers, and if the Bench decided to convict they would be coming to a decision which would affect, not that brewery alone, but every brewery in the Kingdom.—Mr. Titley pointed out that it was impossible to keep barrels of a regular capacity, and if there was a conviction in this case brewery proprietors would have to incur an enormous expense in adopting the Government system of providing brass barrels. If barrels were measures there was no doubt the inspector had been guilty of neglect of duty, because he ought to have visited every brewery in his district and tested all the barrels he found. He asked the Bench to base the decision on the general strong principles of common sense and dismiss the summons against both defendants.—Mr. Bevir said the prosecution did not suggest that the barrels could be always kept at 36 gallons, but if they were used as measures for that quantity there was an infringement of the section.—After consideration the Bench found that the barrels were used as measures, and convicted both defendants.—Mr. Kinneir asked the Bench to adjourn the case for a fortnight as a matter of form, as defendants proposed to ask them to state a case, and the magistrates consented.—The Chairman intimated that the fine in each case was ros., and the costs, £3 15s. 6d., would be divided between both defendants.

## CORRESPONDENCE.

### TRACING THE TRUE OFFENDER.

*To the Editor of FOOD AND SANITATION.*

SIR,—I would like, with your permission, to make a few remarks in reference to the case of Messrs. Fairbrother, of Birmingham, that appeared in your journal on Nov. 28, with the above heading. The case against the Fairbrothers was hard and unjust: they were fined for something they had not done, and, instead of being culprits, they were victims, and had the right of action against the farmer for breach of contract, and for damages for loss to their business. If we could transfer this magistrate from the bench to work a milk-cart for six months, he would never pass another sentence like this. He would know, from bitter experience, that the man who had promised, so faithfully, to supply him with pure new milk, as the cows give it, is not always reliable, and sometimes forgets he ever made any promise at all; but the dairyman's duty is always the same: he must serve his customers with the milk that is supplied him, not knowing its quality. It is impossible to get this knowledge before the milk must be sold, therefore he is dependent solely upon the farmer.

The Fairbrothers were citizens and ratepayers of the city of Birmingham, and were entitled to the protection of the law the same as any other citizen. What they did was simply their daily duty, namely, to supply the milk sent them by the farmer, and when this milk was found adulterated they were in a position to prove by infallible witnesses that the milk was sold in the same condition as received; it was bought for pure



milk, and they had no reason to believe it to be otherwise when sold. When the farmer's milk was found adulterated, it was quite sufficient evidence to prove the Fairbrothers were honest men, yet they were fined. No allowance was made for the difficulties under which dairymen have to work their business, and, with due deference to the magistrates, there was not one out of the 250 customers of the Fairbrothers who had a better title to escape than they. The Bench were hard upon them, but they did not show in what manner they had done wrong knowingly, or had contributed directly or indirectly in the slightest degree to the wrong done.

Convicting these dairymen under such peculiar circumstances appears to me an exceptionally hard case, and contrary to the spirit and intention of the Sale of Food and Drugs Act (Amendment Act) of 1879, which was passed to meet these special cases, and to protect innocent men. Well, though the Fairbrothers were fined, they were not disgraced, and now let us try to learn all we can from this object-lesson.

I would earnestly recommend our friends under all and every circumstance to make it a special condition with every contract that a warranty is sent with every man's milk. The magistrates ask for it, and, in fact, it is impossible to prove to the satisfaction of the Bench that sufficient care has been taken in the contract with the farmer unless this forms the principal item.

I do think, if our Birmingham friends were to make an effort, they could soon alter the present state of things: the fault does not rest with the magistrates, but with the town authorities. The Fairbrothers' case, on the conviction of the farmer, ought to have been withdrawn by the authorities. Years ago we had all this to go through—farmers, dairymen, and shopkeepers all fined for the farmers' fault. We had many interviews with individual city councillors, and also with the committee, but ultimately the following understanding was come to: That if a small shopkeeper's milk was found adulterated, the inspector should meet the dairyman who supplied him at the time he was serving the shop, and take a sample of the same milk he had taken into the shop. If this was found adulterated, he then took samples of the farmer's milk as it arrived at the station. If the farmer's were right, the dairyman would have to pay; but if wrong the farmer would have to pay. This arrangement has been honestly carried out. It has been worked without friction or hardship, and though we have nearly three times the number of samples taken at Birmingham, it produces no inconveniences. We watch each milk case well; as soon as a sample has been taken, we sample every man's milk the farmer sends until the inspector takes it, and we always have the samples analysed, sometimes even after the inspector has taken them. I think out of twelve cases last year we succeeded in pulling ten out of the fire, and the percentage of adulteration has been reduced from 20 per cent. to a fraction over 3 per cent. I wish our Birmingham friends success, and hope, for their own sakes and the honour of the dairymen, that we shall have no more trials like the last.

Thanking you sincerely for the practical way you have reported this case,—Yours, etc.,  
Manchester.

ROBERT EDGE.

## ANSWERS TO CORRESPONDENTS.

### BORIC ACID FOR DUSTING GRAPES.

THE Editor thanks Miss Lepper for her note and enclosure; the latter has been returned. He has noted the supposition of Mr. Morris *re* grapes, but as meat, milk, fish, etc., are now commonly dosed or dressed with preservatives, it would be hazardous to blame grapes alone. The Birmingham Health authorities are doing all they can to suppress this surreptitious drugging of food by traders, but the Local Government Board have given no assistance to any action to stop it. The new Adulteration Act, promised

next Session, may deal with the subject. If it does not, it is open to Miss Lepper and her friends to bring their influence to bear on the Government to prevent this drugging. Until it is made clearly an offence against the law, wines, beer, temperance drinks, fruit, fish, meat—in fact, almost every food will be tampered with, and local authorities hesitate to prosecute because the subject is in a state of chaos and prosecutions are costly.

## ARTIFICIAL YOLK OF EGG.

THE following directions for making an artificial yolk of egg are given in *Cosmos* (Trans. for *Literary Digest*): To reassure the suspicious reader, he is told that yolks thus prepared are intended not for food, but for use in the arts, especially in tanning skins for gloves, but it is not impossible that its manufacture may be carried to such a pitch of perfection that the real product of the domestic fowl may be threatened with such a competitor as oleomargarine has become to butter. In this case we may expect laws to be passed compelling dealers in artificial eggs to label them plainly as such. Says the article referred to: "As everyone knows, the greatest difficulty in making artificial eggs is to form the yolks separately from the whites while keeping them in the liquid state. Albuminous substances harden when they are exposed to heat, but when they have once coagulated they cannot resume their liquid form, even when they are subjected to excessively low temperatures. So that although we can succeed fairly well in isolating the yolk from the white by coagulating it, we at the same time remove all illusion from the people who break eggs of this kind to make an omelet. America, of course, gives us the solution of the problem; it is found in "crostase," a new compound body that possesses the remarkable property of solidifying under the action of heat and returning to the liquid state when subjected to a temperature lower than the freezing point. Crostase is made by mixing equal parts of carbolic acid, camphor, and saponin, with the addition of a very small quantity of essence of turpentine. We should mention that it is not for food purposes that the new product is proposed. There are a large number of industries where albumen is necessary; tanning, for instance, which consumes quantities of yolks of eggs in softening skins for glove-making. For this purpose an artificial substitute presents numerous advantages. And crostase is not the only substance that has been proposed. The *Revue de Chimie Industrielle* gives a formula that is due to Eitner and Trenkman: Take some albuminoid substances, dried or curdled casein, and the vegetable albumen resulting from the manufacture of starch, and dissolve or soak them in water, either warm, or at the ordinary temperature, adding at will, according to the acidity, an alkali, such as caustic potash, carbonate of ammonia, or soda. The quantity of water added depends on the water already contained in the albuminoid substance used—that in dry casein is from 10 to 15 per cent., and that of cured 40 per cent.—and this quantity of water must be taken into account, so that the product, when prepared, shall contain altogether about 50 or 60 per cent. of water. This albuminoid substance, when dissolved and reduced to a state of extreme division, is next mixed intimately, by stirring, with a mixture of oily matter and cholesterin. For this mixture use may be made of various vegetable and animal oils, such as castor oil, cottonseed oil, olive oil, fish oil, or oleomargarine; the more sebacic acid the fatty substance contains the less of it need be used. In general, the mixture will contain, for tanning, 15 to 30 per cent. of oil, by weight, and for painting 20 to 35 per cent. The mixture thus prepared can be rendered more stable, more unalterable, by the addition of a preserving agent such as salt, sulphate of soda, borax, or boric acid. The process of applying this compound is the same as if it were real yolk of egg."



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## Food and Sanitation.

SATURDAY, DECEMBER 26TH, 1896.

### EXCESS WATER IN IRISH BUTTER.

VERY opportunely at the present moment comes a report from the Governors of the Munster Dairy School and Agricultural Institute on the important question of water in butter. The document embodies the result of a number of experiments carried out by Messrs. R. H. Beamish, W. Harrington, T.C.S., and T. A. Forrest. The injury done to the Irish butter trade, says the *Cork Examiner*, of December 12, by the Manchester prosecutions, and the contention in some quarters that it is impossible to produce the article under certain conditions, such as prevail in this country, induced the Governors to place the matter in the hands of the gentlemen whose names have been given. The report says—"In recent years keen com-

petition, and consequent low prices, have revolutionised the butter trade. The Germans and Scandinavians discovered that quantities of butter might be produced in winter, as well as in summer, when their herds were carefully housed and liberally fed. It was recognised that winter-fed cattle produced large quantities of valuable manure, and that the difference between the prices obtained in winter and those procurable in summer compensated for the trouble and expense which must arise in the production of butter made in winter. At first much fault was found with the article by merchants and retailers, both as regards flavour, colour, and general appearance; but judicious alteration in the method of feeding employed, combined with greater knowledge acquired in the manufacture of the article, gradually but surely overcame these faults, until, at last, mild-cured winter butter was brought face to face with the Irish butter pickled in and held over from the previous summer and autumn. Both Irish and foreign butters being now sold side by side, it was inevitable that a comparison should be made between them, and eventually it was found that the heavily-salted Irish butter contained a higher percentage of water, and thereby embodied less nutritive properties, pound for pound. The ultimate recognition of this fact resulted in the legal proceedings which were instituted in Manchester. It had been our endeavour first to ascertain the percentage of water in butter which has been dry-salted or made fresh in Munster; next, to compare the relative keeping qualities of dry-salted and pickled butter; and, finally, to draw certain conclusions upon the general scope of the experiments." There are many pages of most interesting and important tables in the pamphlet, which should be carefully studied by everyone having an interest in Irish butter. The so-called brine salting or pickling and the dry salting systems are carefully examined. Five samples of butter were selected at each churning, from the same cream, and salted

- (1.) With 6.25 per cent. of dry salt;
- (2.) With 9.40 per cent. of dry salt;
- (3.) With 12.50 per cent. of dry salt;
- (4 and 5.) Pickled at temperatures varying between 58 degrees and 105 degrees Fahr.

The remarkable result was as follows: The results of the three forms of dry salting average 11.95 per cent. of water and 5.32 per cent. of mineral salts, as against an average of 26.44 per cent. of water and 5.54 per cent. of mineral salts in the pickled butter. From this, the report states: "The only conclusion to be drawn from these analyses is that the salt appears to be as successfully mixed by dry salting as by pickling, while the great and only difference between the two systems lies in the fact that the pickled butter contained 14.49 per cent. of water in excess of the dry salted samples. If this difference in the quantity of water is reduced to figures of value, it may be stated that when 1s. per lb. be paid for the dry salted butter, 10½d. would represent the comparative value for the same quantity of pickled butter. If, therefore, the quality and keeping power of the dry-salted butter can compare favourably with that of the pickled article, no difficulty need be experienced in deciding on which is the better of the two processes." On the whole question the experts find that:—"At the present stage of knowledge among the Irish butter makers, the standard for dry-salted butter, so far as these experiences indicate, ought not to be higher than 18 per cent. for water; while improvement in the system of teaching might reduce this quantity to below 15 per cent. That such an improvement is urgently required, if the Irish butter maker is to exchange his present precarious condition for the assured position in the butter trade of the world that the conditions of his native climate and soil should secure for him, the analyses of the Australian and



Scandinavian butters convincingly show." The judgment, for so it must be called, is most important. Its bearing on the present situation is most vital. If butter for the future were produced with as little as 15 or 18 per cent. of water—and from the report this seems possible—the alarming forecasts regarding the future of the Irish butter trade would speedily disappear.

#### DISEASED MEAT AND CHRISTMAS MARKETS.

At the last meeting of the Holborn Board of Works, the clerk, Mr. Matthew H. Hale, reported the recovery of £732 in fines from the consignors and vendors of bad meat seized in the Holborn district by the sanitary inspector, the magistrate at the Clerkenwell Police-court having in some of the more flagrant cases inflicted as much as £50 fine. Scarcely a week passed but seizures were made of bad meat sent up from the country, and offered in the local markets for sale.—The chairman of the Sanitary Committee remarked that their medical and sanitary officers, and the clerk (Mr. Hale), deserved every praise for being so successful in obtaining convictions against the senders and sellers of this putrid and poisonous stuff, many of the latter seemingly being of opinion that any kind of carrion would do for Londoners, especially in Holborn. He hoped that they would not relax their vigilance now that Christmas would soon be with them, and the markets would be flooded with produce of all kinds.

#### THE MARGARINE CRUSADE.

At South Shields, on Dec. 9, before Dr. Legat and Ald. Rennoldson, Thomas William West, of 88, Mile-End-road, was summoned for selling butter which was not of the substance and quality demanded, and further with exposing a quantity of margarine without the requisite label to it, and also for refusing to allow the inspector to take for the purpose of analysis a sample of butter, which afterwards turned out to be margarine.—The Town Clerk prosecuted, and Mr. J. O. Davidson defended.

The Town Clerk said there were three summonses against the defendant. The first was for selling butter with 95 per cent. of fats other than butter fats, and the second was for exposing for sale an article as butter, which turned out to be margarine. It was not only a serious matter to the purchaser or the general public, but also to other shopkeepers who were trying to carry on an honest business.

Wm. Edward Arnsby, inspector of nuisances, said on the 16th ult. he went to defendant's shop and asked for a pound of butter, and pointed out the kind he wanted. The assistant gave him the butter and he paid 1s. 1d. for it. There was no label or mark upon the butter. He then handed the butter to Mr. Pollock.—By Mr. Davidson: When Mr. Pollock and himself returned to the shop, Mrs. West said it was a mistake. She said her son was away, and, as it was Monday and they washed up on that day, the things had got mixed and the assistant had made a mistake.

Michael Pollock, inspector under the Food and Drugs Act, said he received the butter from the previous witness and sent one-third part away to the analyst. The certificate showed that there was 95 per cent. of fats other than butter fats.

Mr. Davidson, for the defence, took a formal objection to the certificate, and submitted that the various ingredients should be set out separately.

The Bench overruled the objection, and Mr. Davidson then addressed the Court, and said his client had a shop in Mile End-road, and on the day in question he was called away to Sunderland by an early train. As was his custom on the Saturday night, the defendant took all labels off for the purpose of covering the butters up. On the Monday morning he had not time to replace them, and left a boy in the shop to look after the

placing of them. The inspector was served by the servant, Margaret Gibbon, who had only been there a fortnight, and did not know the butter. It was a pure mistake, and had Mrs. West or her son been in the shop it would not have happened.

The Town Clerk then proceeded with the third charge, and said it was one of great importance. The inspector went into the shop and asked for another pound of a different butter and was refused. The inspector was entitled to the butter without paying for it.

Mr. Arnsby was again sworn, and said when he was in the shop getting the butter in the previous cases, he noticed three firkins of butter standing without any labels on. There was a label of "Finest pure butter, 1s. per pound," lying near one, and it led him to believe that it referred to the firkin of butter near to it. The assistant said it was not butter but margarine.

Mr. Pollock said when he went into the defendant's shop in reference to the previous case, Mrs. West and the assistant were present, and knew who he was. He asked Mrs. West for a pound of butter which was near the label. Mrs. West said, "No. It's not butter but margarine," and the card had been placed there accidentally."

Mr. Davidson submitted that Mrs. West did not refuse to supply the article, but told the inspector that it was not butter but margarine. The card had been placed near the margarine accidentally and did not refer to that butter.

The Chairman said the Bench had carefully considered all the charges, and found the defendant guilty of both the first ones, and they would impose a fine of £5 and costs on the first charge, and 10s. and costs on the second. On the other charges there was some conflict of opinion, and they were disposed to dismiss the charge. They were of opinion, though, that when an officer from the Corporation under the Food and Drugs Act called at any place and asked for a sample, no one had any right to refuse it, and the inspector need not pay for it, and there should not be the least hesitation about it.

Mr. Davidson asked the Bench to state a case. This was granted.

At Kensington Petty Sessions, Perks, Gunston and Tee, Ltd., of 154, Goldhawk-road, Shepherd's Bush, were summoned by the Hammersmith Vestry for selling as butter an article not of the nature and substance demanded, as it contained 45 per cent. of extraneous fat; and also for serving margarine not marked as such.—Mr. Dumphreys, secretary to the company, appeared for the defence, and admitted the offence, remarking, however, that the company had scarcely taken over the business at the time of the purchase in question. When it was found out that a mistake had been made, the man who committed the offence was immediately dismissed.—Mr. Bird: How could the man alter the quality of the butter?—Defendant's representative: I am not aware, sir, that he did alter the quality of the butter; but he sold margarine for butter.—Mr. W. P. Cockburn appeared on behalf of the Vestry.—Alfred Cross, assistant to Inspector Oatley, stated that he went to the shop on Nov. 6 last and purchased 1lb. of shilling "butter." He was served by a shopman, who made no statement.—Inspector Oatley said that he received the parcel of butter from the last witness, immediately after the purchase was completed. He divided it in the usual manner and now produced the certificate of the Public analyst. The article was served in a paper (produced) marked "pure butter."—Charles Watts, the man who served the "butter," said that he had instructions from the manager of the old firm to sell the article in question as butter.—In answer to Sir H. Poland, witness said that he was discharged with a week's notice on the Monday after the Friday that the offence was committed.—Mr. Bird: We consider this to be a



very bad case indeed. The margarine was wrapped up in paper marked "pure butter," and proprietors must be held responsible for the action of their servants. We therefore impose a fine of 60s. and costs in the first case, and 20s. and costs in the second.

WILLIAM HOLMES, of 23c, Aldensley-road, Hammersmith, was summoned by the Hammersmith Vestry (1) for selling as butter an article not of the nature, etc., demanded; (2) for selling margarine without a label stating it to be such; and (3) for exposing margarine for sale not duly marked.—Mr. W. J. Bull appeared on behalf of defendant, and admitted the offence.—Inspector Oatley and his assistant, Alfred Cross, proved the case.—Mr. Bull, to the inspector: Have you ever been in the shop before to take samples? Yes.—And never found anything wrong? No, there has never been anything wrong before.—Mr. Bull stated that Mr. Holmes occupied the little shop referred to, and on the particular day in question he was unfortunately ill, and his wife was managing the business for him. She made up a number of half-pound pats of what she took to be butter. When Mr. Holmes came down in the evening and served the article in question, he thought he was taking from the proper part of the counter. Defendant was a conscientious man, and, indeed, it was hardly likely, if he had wished to defraud, that he would have done so in such a manner. He had been in business for 22 years, and never had anything of the sort before.—Fined 20s., 10s., and 5s. and costs.

#### MARGARINE.

At Thames, on December 15, John Hughes, 16, Fordham-street, Mile End, was summoned under the Margarine Act, at the instance of James Twaites, inspector of food and drugs to the Mile End Vestry, for exposing margarine for sale without a proper label.—The defendant had three tubs of margarine exposed for sale without being labelled. He said that his wife, who attended to the shop, had been ill and the shop had been neglected. He had the proper labels and wrappers in the place, and it was an oversight that they were not used.—Mr. Mead inflicted a fine of £3.

At Smethwick Police Court, on December 16, Henry Cooper, grocer, Oldbury-road, was charged with exposing margarine for sale without having it labelled in accordance with the Margarine Act, and further for not wrapping it in properly-labelled paper. The Bench took a lenient view of the case, and fined defendant £1 3s. 6d., including costs.

#### MEAT.

At Clerkenwell, on December 15, Frederick William Packwood, butcher, of Amptill, Beds., was summoned by Sanitary Inspector Billing for depositing at a shop in Charterhouse-street, Smithfield, a carcase of mutton which was unsound and unfit for food. Arthur Stearn, of 109, Charterhouse-street, was summoned for exposing the same carcase for sale at his premises.—Mr. Ricketts, solicitor, defended Stearn.—The inspector said he seized the mutton at Stearn's shop, where it was hung near the front of the premises, soon after six in the morning. The animal showed evident signs of having died of pleuro-pneumonia.—Evidence having been given that the meat was consigned to the shop by the defendant Packwood, Mr. Bros commented upon the fact, disclosed by the evidence, that the "lung growth" in the animal was so bad that it stuck to the ribs. Whenever this was the case the meat was certainly unfit for food. He must warn farmers and dealers in the country against sending such meat to London, and he fined Packwood £10.—On behalf of the second defendant it was urged that the mutton was being kept, with other consignments of meat, for the inspector to see. Stearn, it was

stated, had been in the business for 40 years without previous complaint.—The summons against Stearn was dismissed.

At Lambeth Police Court recently, Sidney Matthews, of Southampton-street, Camberwell, who was said to be a street butcher, was summoned to answer the complaint of Mr. George Gladstone Morley, a sanitary inspector in the service of the Camberwell Vestry, that in some stables occupied by him at the rear of Queen's-road, Peckham, there was found deposited for the purpose of preparation for sale 14 pieces of meat and one rabbit, which were intended for the food of man, and which were unsound and unfit for that purpose.—Mr. G. W. Marsden, solicitor to the Vestry, appeared in support of the summons. The defendant admitted the meat (which was found by the inspector in a brine tub) was his, but said he was not aware until it was taken out of the tub that it was unsound. Mr. Denham ordered the defendant to pay a fine of £3, and costs.

#### IMPORTANT CASE OF EXPOSURE FOR SALE.

MR. CORSER decided, at Worship-street, on December 8, a new point raised under the Sale of Margarine Act, the sanitary authority of Bethnal Green prosecuting Henry Evans, shopkeeper, of Green-street, Bethnal Green, on two summonses in respect of the sale of margarine.—Mr. Lloyd Humphries, solicitor, defended.—Sanitary-Inspector Hanley proved that he was served in the defendant's shop with margarine, which was taken from a tub, weighed, and handed to him in an unlabelled paper. The tub was not labelled, but it was admitted that the article was not sold as butter, and there was no deception. Further it was admitted that the tub was, at the request of the inspector, taken down from a shelf at the back of the shop, and it was not in use until the inspector asked to be served from it.—Mr. Humphries submitted that this was not really an exposure for sale, but that the tub was part of the "dressing" of the shop, and until brought down for retailing was a decoration.—Mr. Corser intimated that he would have been inclined to agree with this contention but for the case of "Crane v. Lawrence," where the High Court had held that the exposure to the "view of a purchaser" was an essential in an "exposing for sale." In the case named the article, though in the shop, was hidden from the view of persons entering, and that was held not to be an exposure. He (Mr. Corser) decided that the margarine, being in the shop "exposed to the view of a purchaser," was "exposed for sale," and ought to have been labelled. He therefore convicted the defendant, and fined him 20s. and 12s. 6d. costs in respect of that matter, costs of the summons being ordered in respect of the second case.

#### WATERED MILK IN GLASGOW.

At Glasgow Sheriff Court, David Reid, farmer, Redmoss Farm, Lennoxtown, was convicted of having supplied a Glasgow milk dealer with 8, 6, and 2½ gallons of sweet milk, which, on analysis, was found to contain 1, 1, and 5 per cent. respectively of added water.—Sheriff Fyfe fined him £4, including the expenses in the case, which the prosecutor, Mr. John Lindsay, interim clerk of police, stated amounted to £4 5s.

#### MILK.

At Wakefield, on December 11, several milk dealers were summoned, at the instance of the West Riding County Council, for selling adulterated milk, and were fined as follows: Kendel Ineson, of Normanton, whose milk was adulterated to the extent of 10 per cent., had £1 10s. to pay; William Barker, farmer, Streethouse, 13 per cent., £2 12s.; John James Dennison, milk



dealer, Normanton, 9 per cent., £1 10s.; John Blackburn, milk dealer, Rothwell, 7 per cent., £1 10s.; and Robert Hall, milk dealer, Normanton, 16 per cent., £1 10s.

### A SOAP PROSECUTION.

SEPTIMUS WOLGATE, chemist, of Ealing Broadway, was summoned at the Brentford Petty Sessions, on December 5, for selling as an arsenical soap one which contained no arsenic.

Inspector Tyler stated that the summons was taken out under the 6th section of the Food and Drugs Act, which provided that no person should sell to the prejudice of the purchaser any article of food or any drug which was not of the nature, substance, and quality of the article demanded. On November 23 last witness's assistant went to defendant's shop and asked for a tablet of arsenical soap. He was supplied with a tablet of soap having impressed on it the words, "Arsenical complexion soap," and he paid 6d. for it. The soap was afterwards analysed, and found to contain no arsenic.—Mr. Coleridge: It was bought and sold as a toilet soap?—Witness: It was purchased as arsenical soap.—Mr. Coleridge: Do you know cucumber soap?—Witness: Yes; and I should expect to find some trace of the essence of cucumber in it.—Mr. Coleridge: If there were a substantial amount of arsenic in this soap, would it not be dangerous?—Witness: I don't know. I expect a soap sold as arsenical soap to contain some arsenic.—Mr. Beaven, the Middlesex county analyst, said he had carefully analysed the sample of soap sent to him, and he could find no trace of arsenic. There might have been some arsenic in it. There might be arsenic in anything. But it was not present in any quantity which the most delicate analysis would detect.—Mr. Coleridge said he should call evidence to show that there was arsenic in this soap, but he objected to the prosecution on the ground that arsenical soap was not a drug. In 1894 a similar summons in respect of sulphur soap came before Mr. Lane at the West London Police-court. It was proved indisputably that there was no sulphur in the soap, but Mr. Lane dismissed the summons on the ground that sulphur soap was not a drug. If the magistrate held that fancy soaps were medical preparations, and sold as drugs, there might be endless prosecutions, and a glorious vista would be opened up to barristers.—Mr. H. N. Bolton, trading under the name of D. F. Bristowe and Co., of Clerkenwell, said he manufactured the arsenical complexion soap sold by defendant. It was made to be sold as a toilet soap, not as a medicinal preparation. Two and a-half grains of arsenic were put in every three hundredweight of soap. He did not pretend that this small quantity of arsenic made any real difference to the soap.—Mr. Montgomery: Then why put it in at all?—Witness: Because it is arsenical soap.—Mr. Montgomery: But why sell it as arsenical soap?—Witness: Because there is a demand for it. People think arsenic is good for the complexion, and so we make an arsenical soap for them. Proceeding, witness said that there was no white rose in white rose soap, nor any cucumber in cucumber soap, any more than there were pears in Pears' soap or sunlight in Sunlight soap. (Laughter.)—The bench held that arsenical soap was a drug, and that this soap contained no arsenic. There must, therefore, be a conviction, and defendant would be fined £5 and costs.—At the request of Mr. Coleridge the magistrates agreed to state a case, with a view to an appeal to a higher court.—Ernest Frank Strickland, another Ealing chemist, was fined £5 and costs. In this case also they agreed to state a case for appeal.

### INTERFERING WITH AN INSPECTOR.

At Worship-street, on Dec. 12, Mary Ann Oakley, keeping a temperance refreshment-house, at 175, City-

road, was summoned for wilful and malicious damage to certain property, *i.e.*, two glasses of milk.—Mr. Bodkin, barrister, appeared for the prosecution, at the instance of the Vestry of St. Luke's; Mr. Margetts, solicitor, defending.—The summons was taken out on the information of Richard Adams, sanitary inspector of St. Luke's parish, who, it appeared, went to the refreshment-house with his assistant, and sitting down in the shop at a table, called for two glasses of milk and two pieces of cake. Payment was made and the purchase completed, upon which the sanitary inspector said that he had bought the milk for analysis by the public analyst. The defendant thereupon said, "Oh, if you want it for that I can give you pure milk; I thought you were *bonâ fide* customers and wanted a glass of milk." She then laid hold of the glasses to take them away, and was told that the purchase had been completed, and that she would not be allowed to take it away. She, however, threw the milk upon the shop floor, and brought more milk in the glasses. The inspector admitted that he had sent for a constable, and wished to give the shop-keeper into custody for stealing the drink.—Mr. Cluer doubted if the summons was rightly taken out for wilful and malicious damage, and Mr. Bodkin said it had been done after the facts had been submitted to him.—Considerable legal discussion resulted, Mr. Cluer eventually deciding that he was asked to convict the defendant for obstructing the inspector in his duty, and that though the act was one of damage it was not "malicious" within the meaning of the Act. The intent was everything, and the inspector, he thought, was protected by the 17th section of the Act. The defendant was wholly wrong in her proceeding, and her punishment, he said, should be to have the announcement placarded in her shop—"milk and water is supplied here."—The summons was dismissed.

### BEEF STEARINE IN LARD AND PRESERVATIVES IN FOOD.

#### ACTION BY THE GLAMORGAN COUNTY COUNCIL.

At the quarterly meeting of the Local Government Committee of the Glamorgan County Council, at Cardiff, on December 10, acting on reports of the Medical Officer (Mr. W. Williams, M.D., D.P.H.), and the analyst (Mr. Clarence A. Seyler, B.Sc., F.I.C.), the members resolved that the police be instructed to prosecute in all cases where lard was found to be adulterated with beef-stearine, and where butter and milk were discovered to contain borax or boric acid. The medical officer's report explained that borax and boric acid tended to prevent the formation in milk of the poisons which may be produced by bacterial decomposition. However, if dairymen were allowed to add boric acid or borax at their own free will they would be under the temptation of keeping milk longer than they would otherwise do, and thus the public will in the end run the double danger of boric acid *plus* decomposing milk. The use of boric acid in milk is entirely prohibited in France, and some of the largest milk supply companies in the metropolis entirely forbid it, thus showing that there is no absolute necessity for its use. At Birmingham convictions have been obtained for boric acid in milk to the extent of 60 to 65 grains per gallon. Dr. Williams recommended that borax and boric acid should not be sanctioned as preservatives to milk, butter, etc., unless very stringent rules indeed are passed as to the quantity to be used, and in the present state of our knowledge regarding these substances, it would probably be better to prohibit their use altogether, for there can be no doubt that the principle is utterly bad, and the practice of drugging the public promiscuously and without their knowledge, and by incompetent persons, when they are in good health, is very dangerous." Beef stearine was described in a case, which the Council lost at Llandaff recently, as a



necessary addition to lard to prevent its dissolution in hot weather. Dr. Williams conclusively showed that this was not so, and appended a report, signed by twenty-one of the principal lard manufacturers and members of the Bacon Curers' Society of Great Britain, which denied that Mr. Sankey, of Cardiff (who had supplied lard forming the subject of prosecution at Llandaff), was justified in stating that what was recognised as pure lard in the trade generally contained about 16 per cent. of beef stearine, and that the only time pure lard was actually sold was at Christmas. Pure lard, they asserted, should be absolutely hog's product. It did not require stiffening in the hottest weather, and they maintained that pure lard, as recognised by the trade, was exactly what it professed to be. It was agreed that copies of the reports should be sent to the Parliamentary members for the county and to the chiefs of the Government departments, with the request that amendments to the Food and Drugs Act should be introduced so that the local authorities could insist upon "pure food for the people."

#### THE AMERICAN LARD CASE.

MR. DE RUTZEN attended the Westminster Court, on December 12, specially to give his judgment in the prosecution, under the Merchandise Marks Act, instituted by the Board of Agriculture, against Mr. George Nicholls, wholesale provision merchant, of Wood-street, Westminster, for selling American lard with an alleged false trade description. Mr. Bodkin, instructed by Mr. William Lewis, appeared for the Treasury, and Mr. Frank Safford, with Mr. J. D. Langton, for the defendant. Argument and evidence, much of it of an expert character, has occupied the Court for six afternoons, the case for the prosecution being that the American lard, refined in Belfast, was stiffened, so as to be merchantable and marketable, with about 10 per cent. of ox stearine. Mr. De Rutzen said all the evidence showed that there was such a thing as pure lard, and that it possessed sufficient solidity, when cooled, to become at once a merchantable article, in bladders, without requiring the addition of any kind of extraneous matter. It was proved that the lard sent over from Belfast had been solidified with beef stearine, and, although it was not suggested that there was anything injurious in the admixture, it could not, in his opinion, be properly designated pure lard. There was no sort of imputation upon Mr. Nicholls as a trader, but he had, in selling this lard from Belfast, been negligent in not seeing that it was accurately described. There would be a nominal penalty of 40s. on the summons, which had been fought out, but the costs were very large, and he should order Mr. Nicholls to pay thirty guineas towards them. Mr. Bodkin asked that there should be a nominal penalty against the defendant on other summonses which had not been heard, but which were all governed by the decision. Mr. Safford objected, and said he should probably ask his worship to state a case for a superior court. Mr. Bodkin: I have a strong opinion that there is no legal point involved, and that the only appeal could be one to the quarter sessions. Mr. De Rutzen advised the defendant to consider the matter, but he would give him any facility he could to take the case further, if he eventually desired, and with this understanding, the other summonses referred to by Mr. Bodkin were adjourned *sine die*.

#### WHY WAS THE PROSECUTION INSTITUTED?

AT Clerkenwell, on December 12, Alexander Morten, farmer, of Stevenage, Herts, was summoned by Sanitary-inspector Billing, on behalf of the Holborn District Board of Works, for depositing at Link's shop, 91, Cowcross-street, Smithfield, six pieces of beef, which were unsound and unfit for food. It was proved by the prosecution that the meat was diseased, but it was also

shown that when the inspector made the seizure the hamper containing the pieces of beef was labelled:—"This meat is subject to inspection; if not fit for food to be destroyed."—Mr. Horace Smith, on reading the label, at once dismissed the case.

#### AN "ARSENICAL SOAP" CASE DISMISSED.

AT the Brentford Police-court on December 12, before Mr. G. G. Mackintosh (in the chair), and other magistrates, a remarkable charge under the Food and Drugs Act came on for hearing. The defendant, Mr. George Turner, a chemist, of High-road, Chiswick, was summoned for selling a quantity of "Arsenical" soap, which was not of the nature and quality demanded." Mr. Tyler, inspector under the Act for the Middlesex County Council, prosecuted, and Mr. A. Hutton, barrister, represented the defendant.—Mr. Tyler stated that a tablet of "arsenical" soap was purchased at the defendant's shop, which, on being analysed, was found to contain an insignificant amount of arsenic. It was estimated that a pound of the soap would only contain the hundredth part of a grain of arsenic. (Laughter.) This amount, the analyst considered, was of no practical value.—Mr. Hutton raised a technical objection to the summons on the grounds that the wrapper which contained the soap stated that the amount of arsenic used was "small and was perfectly harmless." The definition of the word "arsenical" in all the standard dictionaries meant the introduction of arsenic in any quantity into the composition of an article. (Laughter.)—Mr. Tyler stated that an expert had given it as his opinion that to be of any service to the public, arsenic to the amount of one and a-half grains to the pound should be introduced.—The Chairman: But the British Pharmacœpia has not laid down a standard.—Mr. Hutton contended that as arsenic had been introduced into the composition of the soap, in however small a quantity, the charge must fail. The Chairman expressed his concurrence with this contention, and the summons was dismissed.

#### POISONOUS WHEAT.

AT Birmingham, on December 14, before Mr. Commissioner Darling, Q.C., and a jury, the cause of "Hulme v. Rider Betts and Sons" was tried. Mr. Hugo Young appeared for the plaintiffs; and Mr. Stanger, Q.C., and Mr. Parfitt for the defendants. This was an action for damages, estimated at £73, suffered by the plaintiff by the illness and death of various cows in his possession, which were poisoned by wheat sold to plaintiff by defendants, the wheat being impregnated with lead. The plaintiff was a farmer, having a herd of 35 cows. The defendants were corn merchants at Coventry. In June and July the plaintiff bought of the defendants damaged wheat at £3 a ton for feeding his cows. Soon after they began to use it illness broke out among them, and, one dying early in August, a *post-mortem* examination revealed a quantity of lead in its stomach. The wheat not consumed was washed and showed lead, and Dr. Voelcker, who was called for the plaintiff, deposed that apart from chemical analysis, the full danger of using the wheat would not be apparent. For the defence it was contended that the plaintiff was expressly warned by the defendants against choosing such bad wheat and using it for food, and it was argued that this negated the implied warranty arising under the Sale of Food and Drugs Act upon a sale by sample. For the plaintiff this was denied, and it was further argued that under the Fertilisers and Feeding Stuffs Act, 1893, the vendor of stuffs intended for animals' food is saddled with the responsibility of the stuffs being unfit for such food. His Lordship laid it down to the jury that any implied warranty would be negated by an express contract or by the equivalent to an express contract arising out of



the course of dealing between the parties. The jury found for plaintiff, and assessed the damages at £40. Judgment accordingly.

#### PARAFFIN WAX AND SWEETMEATS.

AT Dudley Police Court, on December 14, John William Gray, confectioner, Wolverhampton-street; Harry Gray, confectioner, Hall-street; and Thomas Cook, confectioner, the Minories, were summoned for selling sweets mixed with paraffin wax. Mr. E. M. Warmington (Town Clerk) prosecuted, and Mr. S. Guest Hooper, defended the Grays, who pleaded guilty. Evidence was given to show that samples of sweets were taken from the defendants, and analysed, and were found to contain paraffin wax. This, the doctor said, was perfectly indigestible, and injurious to anybody who ate the sweets. Similar sweets were taken by a child at Smethwick, and it died, and Mr. Brown, Inspector under the Food and Drugs Act, said he had had complaints of children being taken ill, after eating the sweets. Mr. Hooper contended the Grays ought to have been warned. The sweets had been sold for 15 years, and directly the Birmingham prosecutions were taken, they stopped selling them. The Bench said the defendants were liable to a fine of £50. They would be fined 40s. and costs each.

#### COLOURING MATTER IN FOOD.

WE are not prepared, says the *Isle of Wight Observer*, to discuss the legal aspect of the decision recently given by the County Bench, but from a public point of view we think it was a most undesirable one, and we quite agree with the Chairman that a conviction ought to have followed. It seemed that the bright green appearance of some peas sold by a certain Ventnor grocer was due to the addition of sulphate of copper, a virulent poison which a chemist never sells without warning his customer. This was detected by the public analyst, and though he could not say that the addition (which amounted to 1·7 of a grain in 11b.) was injurious, he considered it "most objectionable." We quite agree. The addition of such deleterious substances to food may not have immediate injurious effects, but that is no reason why such addition should be permitted. Of what use is the Food and Drugs Act, if the magistrates do not use its provisions to deal with such cases as this? If the label on the peas had stated "There is an addition of 1·7 of a grain of sulphate of copper to every pound of these peas," is it likely that any member of the long-suffering public, who respected his stomach, would have purchased them? Why should manufacturers or preservers of food be allowed to foist such stuff on the public? We hope the County Bench will not be so lenient again. In one way, perhaps, the prosecution may do good, for if the statement is true that peas can only be preserved by the addition of copper, they are likely to be religiously avoided in their preserved form in the future.

#### CHRISTCHURCH WATER SUPPLY.

OWING to the increased demand for water and the extension of the mains for supplying Southbourne, near Bournemouth, as well as Christchurch, the West Hampshire Waterworks Company have, on the advice of their engineer, Mr. St. George Moore, M. Inst. C.E., of Westminster, decided to enlarge their waterworks, and to put down further Candy Clarifiers and six additional Polarite filters.

#### THE EVILS OF EXCESSIVE TEA DRINKING.

THE Superintendent's report for Moncur-street Dispensary, Glasgow, contains the following:—"It is remarkable that a large percentage of women patients

suffer from stomach ailments, due in large measure to the great quantities of tea they imbibe. It would be a great boon if factories had restaurants attached to them where a properly-cooked diet could be procured at a reasonable cost. It is quite common to meet with patients who never have any meals without tea, and experience leads me to think that it is impossible to maintain vigorous health on such a dietary. Tea, with bread and butter, ham and eggs, seems to be the staple articles of diet. Broth and oatmeal porridge are not so generally used as they were wont to be in Scotland, but whisky appears not to have lost in favour."

#### OYSTERS AND TYPHOID.

THE Local Government Board has just published a Yellow Book on "Oyster Culture in Relation to Disease." It is a very comprehensive compilation, exhaustive, and almost artistic. It contains reports made by the officers of the Local Government Board of the condition of things at every part of the coast line of England and Wales where it could be ascertained that the cultivation and storage of oysters were carried on for trade purposes. It gives in this connection a complete account of the anatomy and physiology of the oyster in so far as the oyster is susceptible to the influence of sewage, and it presents several interesting considerations regarding "green oysters." But this by no means exhausted the scope of the Local Government Board's inquiry. It takes in the investigations of Dr. Klein, the bacteriologist, with regard to the general behaviour of the typhoid bacillus, and with regard to oysters in experimental relation with the typhoid bacillus. Lastly, it quotes the results of experiments made in France, and presented to the Académie de Médecine of Paris relating to the spread of disease through the agency of oysters. The reports and results of all these inquiries and investigations are handsomely illustrated. There are photographs illustrating oyster beds and the methods of oyster culture; there are charts of the districts where oyster layings exist, with the points where sewage is discharged specially indicated and distinguished; and there are some 50 horrifying diagrams representing oysters and gelatinous bodies inoculated with the germs of cholera and typhoid.

#### BEDS—GOOD AND OTHERWISE.

Oysters consumed in England (says Dr. Bulstrode in his report) may be divided into three categories: Oysters born and bred in this country, oysters introduced from abroad and laid down for varying periods in our waters, and oysters imported from abroad and consumed without being relaid in this country. It may be said at once that the native-born or the native-relaid is at any rate no more dangerous than its foreign competitor. "In view of the main facts which have been set out in this report, it might, perhaps, be imagined that our English oyster fisheries compare unfavourably in point of risk of sewage contamination with those of foreign nations from whose shores there is a considerable importation into this country. The evidence, so far as it goes, does not support any such view. . . . As regards layings in the Mediterranean and on the coast of Brittany, conditions obtain which are fully as objectionable as those at certain points along our own coast; and . . . the oyster fisheries across the Atlantic also call for supervision in this respect." And the fact of the matter is that all oyster fisheries are not bad, or badly conducted. Not only (the report plainly states and shows) are some of our principal oyster layings, beds, and ponds altogether above suspicion in this respect, but their produce has deservedly the highest reputation. There are some oyster fisheries which are very bad; the conditions at Southend, at Cleethorpes, and Grimsby and the Medina River appear to be the



worst; but these conditions are by no means universal, and Dr. Thorne, the medical officer of the Board, refers with satisfaction to the state of some of our most celebrated fisheries on the coasts of Essex and Kent. Thus the oyster "layings" on the River Crouch may now be regarded as "free from risk of sewer contamination." Much the same freedom from risk applies to the "layings" in the River Roach, and it would take but little to render them altogether secure. The Blackwater layings may also on the whole be regarded as free from sewage pollution; and though some of the Colchester natives come from beds in the River Colne, where they are not entirely above suspicion, most of the layings in the creeks of the Colne are deemed to be practically free from risk. With regard to the Whitstable natives, too, the report allows us to take heart. These fisheries are in the hands of two companies, who possess storage ponds at Hayling Island. These storage ponds are mainly used for wintering purposes, and these are to be regarded as free from contamination. One of the companies has two "layings" at the mouth of the Swale, one of which is above suspicion, and the second is a mile and a quarter from the sewage outfall. This is the only laying that has the slightest doubt about it, and this doubt is so small that Dr. Bulstrode has arrived at the conclusion "that both these layings should be regarded as practically free from liability to contamination from Whitstable sewage." So that those of us who are fond of Whitstable natives can take heart again.

#### GRIMSBY AND WORSE.

But there are some places which are bad in the worst degree. Oysters are stored, as well as bedded, if we may use the expression, in ponds, pits, and in floating boxes. In some instances the means of storage immediately antecedent to the distribution of oysters for human consumption must come under distinct condemnation. The means for the storage of oysters in the Fish Dock at Grimsby are particularly offensive and dangerous. Setting aside all question of the washing back into the dock of the large body of highly diluted sewage, the dock itself (where oysters are stored in floating boxes) receives filth into its confined water in no inconsiderable quantity. These waters, indeed, were found to be dirty to a high degree. "In a word, the Grimsby Fish Docks," says Dr. Bulstrode, "must be pronounced an altogether improper place for the storage of oysters." Dr. Thorne further points out that the arrangements as to oyster culture and storage at the mouth of the Humber remain what they were when the facts elicited regarding the cholera and enteric fever outbreaks of 1893 started this inquiry. It may be added that the medical officers of the Board accused Grimsby at that time of contributing to the outbreak through its oysters.

#### SOUTHEND AND THE ISLE OF WIGHT.

At Southend the state of affairs is even worse. There are two "layings." At the one to the west of the pier the oysters are placed between two principal sewer outfalls, to say nothing of the proximity of minor outfalls at a point where the sea bottom and the matters floating on the surface afford the most obvious proof that the conditions are filthy in the extreme. These Southend oysters would appear to be placed on sale direct from the layings, except such as are temporarily stored in floating boxes south of the pier pavilion. At this point one float was discovered within thirty-six yards of a pipe from one of the pier lavatories. The owner of these layings admitted, as regards the western laying, that it "was perhaps more exposed to sewage than any others in England." Thirdly, there are the "layings" in the Medina, Isle of Wight. These fattening beds are regularly washed with water abounding with crude sewage refuse, which comes down from Newport—a town with 10,000 inhabitants—and with the effluent from the neigh-

bouring prison and barracks and a workhouse cesspool, and which receives into it, immediately below the layings, the sewer outfalls of East and West Cowes. Other places which call for attention are layings in the Penryn River, Cornwall, those in Brightlingsea Creek, Essex, and the South Channel, Shoreham.

#### DO THEY INFECT?

The oyster shops may perhaps be induced to quote jubilantly one single paragraph from the report. It refers to Dr. Klein's bacteriological investigations. "The typhoid bacillus, which is the accredited agent of enteric fever, was only in a single instance detected by Dr. Klein in any oyster out of a number that had been unquestionable stored in relation with sewage. The instance in question had to do with American oysters which had been stored in the 'float' in the Fish Dock at Great Grimsby." But this by no means frees the oyster from suspicion of being contaminated by sewage—and, indeed, the people who would care to eat him knowing that he had been so contaminated must be few. Dr. Klein's investigations showed, at any rate, that oysters which had been exposed to sewage contamination were found to exhibit "colon bacilli," and he showed that the typhoid bacillus and the cholera bacillus can exist in sea water for weeks, and can affect oysters. "Every skilled observer," says Dr. Thorne, "whose investigations have gone to show that oysters have served as a medium for conveying disease to man has admitted that the risk is by no means a great one. . . . but the mere fact that occurrences of disease as the result of eating oysters are somewhat exceptional can in no way justify the retention of those conditions by means of which these occurrences are brought about."

#### TUBERCULOSIS.

By PROFESSOR J. MACFADYEAN,

*Principal of the Royal Veterinary College, London.*

LECTURING at Newcastle recently, Professor Macfadyean said that the modern view of the disease was that it was a purely contagious one, and its essence was the invasion of the body by parasites. Its growth was very slow even under the most favourable conditions of temperature. When the germ was voided from a diseased animal, that germ would seldom find in the outer world conditions favourable to its growth. It might in favourable circumstances maintain its vitality, but it would not multiply. When an animal contracted tuberculosis, the germ had been bred in a previous tuberculous man or animal. When a tuberculous animal was kept in close contact with other animals, it was almost sure to infect them. The principal way in which tuberculosis was spread was by tubercles coughed on the walls by affected animals. Tubercles dried on the walls, and, being easily detached, floated about as dust, and were inhaled by other animals. There was less danger if the cattle were at grass. There was then greater space, and there was consequently less chance of germs finding their way from one animal to another. The germs soon perished when exposed to the sunlight. This accounted for the disease being found so much among highly-pampered and housed cattle, and the comparative exemption from the disease of the cattle reared and kept out of doors. The breed of an animal might have an influence, but the disease was certain to be most prevalent amongst those placed in circumstances specially favourable to infection. A few years ago the general belief was that a large proportion of animals which were affected were born tuberculous, and that this was the way the disease was spread. An impartial enquiry had compelled many of them to abandon this view. Evidence showed that tuberculosis in newly-born calves was one of the rarest pathological curiosities. The contention that the germs were



generally evenly distributed throughout the whole body of tuberculous animals was no longer tenable. The visibly diseased parts were dangerous. In a great majority of cases of tuberculosis the carcase did not contain the disease, and was suitable for consumption. An inspector who condemned a carcase because he found tuberculosis in the lungs of the animal would now have difficulty in justifying his action. The consumption of milk from a tuberculous cow was not dangerous unless the udder itself was affected, and it was in a small percentage of cases only that it became infected, and its presence was easily detected by veterinary examination. This suggested that a periodic inspection of milch cows by veterinary surgeons would go a long way in protecting the public from this danger. But such an inspection at longer intervals than a fortnight would be of little use, and the compulsory inspection of all dairy cows in this country twice a month would cost nearly half a million of money, if not more. Such an inspection, although it would greatly reduce the danger, would not entirely remove it. An udder healthy to-day might be affected in less than a fortnight. There did not seem at present much probability that such a system of inspection would be soon introduced. A less expensive, but unfortunately a less efficient safeguard of the public health would be to make the notification of disease of the udder in milch cows compulsory and the sale of milk from a cow with a diseased udder punishable. But neither of these methods would give the public a guarantee of absolute freedom from danger of contracting tuberculosis through milk. Every person, however, could purchase that guarantee by simply boiling or steaming milk before using it. It had been gravely asserted that human tuberculosis frequently came from the butcher's stall. But the idea that human consumption would be materially reduced by the stamping out of cattle tuberculosis was not, he believed, entertained at the present day by any pathologist of repute. There was little doubt that every person sometimes consumed beef of animals affected in some way by tuberculosis, but this fact had no terrors for him, because the edible portions of the carcasses and actual meat substances contained the germs in extreme cases of the disease only. Danger could be avoided by thorough cooking. A veterinary surgeon up to the times could by the aid of tuberculin tell a farmer within 24 hours precisely which of his cattle were affected.

The Chairman said he could not go so far as to say that tuberculosis was a purely contagious disease. He was perfectly certain in some cases it was congenital. When the disease was localised, he was of opinion that the carcase was fit for food. He contended that if the owner of cattle had to notify the authorities of any affected with tuberculosis, human beings ought to be subjected to a similar regulation. He was quite sure that there was as much tuberculosis spread among cattle by human beings as there was by cattle among human beings. He advocated the abolition of private slaughter-houses, and the establishment, generally, of public abattoirs. Until this was brought about, the public would continue to be subject to the danger of eating diseased meat. Dead imported meat ought also to be examined, if home meat had to be examined. A respectable butcher who had bought a beast at a good price ought to be compensated if it were afterwards found to be diseased and confiscated. He had heard a great deal about the Danish system of breeding healthy animals from diseased ones. He begged of them not to try the experiment.

Prof. MacFadyen subsequently, in replying to a vote of thanks, said, that tuberculosis was occasionally transmitted from cow to calf, but this happened very rarely. No matter what form of inspection was adopted, it would not guarantee freedom from infection. He would never allow a child of his to take milk that had not been boiled; 999 human beings out of every

1,000 that became affected by tuberculosis were infected from tuberculous human beings.

[We are much obliged to the friend who sent us the *Newcastle Daily Chronicle*, from which the foregoing most interesting report is taken. It comes at a most opportune moment when the subject of tuberculosis is again receiving consideration from a Royal Commission, and through our columns, we have no doubt, it will be prominently brought under the notice of that body and receive the consideration it merits.—ED.]

### THE DUTY OF SANITARY INSPECTORS.

IN the Aberdeen Police-court, on December 11, Baillie Young on the Bench, Christina Clark, or Burnett, Duff-street, was charged with having, during the period from 1st to 5th inst., allowed a drain so foul as to be injurious to health and offensive to the residents in the locality to exist at a house at 13, Duff-street, owned by her or under her control. Accused pleaded not guilty. Several sanitary inspectors, and also several of the tenants of the house, stated that the drain had been choked off and on for some time, the result being that dirty water flooded part of the back court of the house. The water, it appeared, had been turned off the house some two months ago, owing to a burst in the pipes. The leak had never been repaired and the water never turned on again, the result being that the drains had got into bad condition. Accused pleaded that she had had no money to get the drains put into order, but that she had now received her rent from one of the tenants, and would carry out the improvements at once. She also, in the course of her statement, made a complaint about Mr. Cameron, the sanitary inspector, having ordered her to execute altogether extravagant alterations in her house. Baillie Young said that it was no good trying to blame the sanitary inspectors. They were kept at considerable expense by the town to go about and see that things were kept clean about houses. In dealing with her they had only been doing their duty. Judgment in the case was deferred till Monday, in order that Mrs. Burnett might have a chance to get the drain cleared before then.

### WHY NOT GIVE MORE ENGLISH PRINTERS A CHANCE?

THE prettiest and most novel Christmas gift which we have come across is that of Messrs. Goodall, Backhouse and Co., of Leeds, whose Yorkshire Relish is world-famed. Everyone does not play cards, but those who do not can admire the very beautiful workmanship of the packs of playing cards Goodall, Backhouse and Co. are sending to their customers, and along with their admiration they may mingle the gratifying thought that the beautiful workmanship is "made in England." The cards are of exceptionally fine quality, with rounded corners, and indexed, and along with each pack is a copy of De La Rue and Co.'s Whist Rules. It would be difficult to find any fault with the coloured backs as the register is as perfect as anything we have ever seen in colour-printing. It has of late years become a grave and growing scandal that so much of chromo-lithograph work in pictures, posters, Christmas cards and toy books is done in Holland, France, and Germany. It has become a cant phrase that such "work can be done better abroad."

In setting the good example of encouraging native art and native labour Messrs. Goodall, Backhouse and Co. do a very necessary thing, and acts like this show that however great may be their business success, they deserve it. We commend their example to the Tucks, Deans, and other publishers who live out of English people but have their work done anywhere save in England.



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the Public of the United Kingdom.



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John Kettle, 58, Woodgrange-road, Forest Gate.  
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road, W.  
Leverett & Frye, Ltd., 1 & 2, Strathavon-terrace,  
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Leverett & Frye, Ltd., Competitive Stores, 111,  
High-road, Streatham, S.W.  
Leverett & Frye, Ltd., Finchley-road, N. Finchley.  
Leverett & Frye, Ltd., 86, High-street, Notting  
Hill, W.  
Leverett & Frye, Ltd., 35, Upper George-street,  
Edgware-road, W.  
Leverett & Frye, Ltd., 6, Castle-ter., Belvedere,  
Kent.  
Leverett & Frye, Ltd., 88, Peckham-road, Peckham,  
S.E.  
Leverett & Frye, Ltd., 281, Barking-rd., Barking, E.  
Leverett & Frye, Ltd., 188, Bow-road, Bow, E.  
Leverett & Frye, Ltd., The Pavement, Wanstead, E.  
T. Lighton, 98, Brixton-hill, S.W.  
H. Mose, Whitehall Parade Stores, 11-19, Arch-  
way-road, N.  
J. Mercer, 24, Lordship-lane, East Dulwich.  
Nichols & Fisher, 286, Elgin-avenue, Maida-vale,  
and 173, Ladbroke-grove, W.  
G. S. E. Newcombe, 78, Westow-street, Upper  
Norwood.

George Olsen, Chingford.  
Thomas Pelling, Broadway, Barking, E.  
G. H. Page, 43, Castle-street, Oxford-street, W.  
Parker's Stores, 112, Norwood-rd., Tulse-hill, S.W.  
Jno. Phillips, 12, Circus-rd., St. John's Wood, N.W.  
A. Rake, Craven-passage, Strand, W.C.  
J. W. Robey, 204, Bow-road, E.  
Sargeant & Co., Park Hall Stores, High-road, E.  
Finchley  
Sherwin & Wallis, 136, Seven Sisters'-road.  
J. Sitton, 37, London-road, Southwark.  
Charles Savage, 216, 218, 220, and 414, Kennington  
Park-road, S.E.  
A. C. Smith, 134, Petherton-road, Highbury.  
The Supply Co., 15-17, Dartmouth-rd., Forest Hill.  
Joshua Thomas, 56 & 58, Lamb's Conduit-street,  
Holborn.  
Tower Hamlets Co-operative Society, Ltd., 436  
and 438, Commercial-road, E., 70, Brunswick-rd.,  
Poplar, E., 227-229, Bow-road, E.  
H. Turtle, 244, Mile End-road, E.  
P. Thorn, 22 & 24, Greyhound-rd., Hammersmith,  
W.  
Wakefield & Sons, 140, High-road, Streatham,  
Gleneagh-road, Streatham.  
Wahnrow's Stores, 38, Store-street, Tottenham  
Court-road.  
W. Whiteley, Queen's-road, Westbourne-grove  
Williamson and Sons, 63-67, High-st., St. John's  
Wood, N.W.  
H. W. Wood, Temple Stores, Commercial-road,  
Stepney, E.  
A. Waters, 29, Paddington-street, W.



# BOVRIL

**IS THE VITAL PRINCIPLE OF PRIME OX BEEF,**  
FROM CATTLE REARED IN AUSTRALIA AND SOUTH AMERICA.

ANIMAL FOOD offers a means of strength and stimulus not furnished by any other aliment, and the perfect assimilation of nutritious food is an essential condition of perfect health, but the high-pressure life of the present age demands an effective stimulative nourishment, taking little time to prepare or consume, yet not detrimental to the digestive organs, hence the introduction of Meat Extracts, Meat Essences, &c.

But BARON LIEBIG, the great German chemist, discovered and publicly declared on Nov. 11th, 1865, the unsuitableness of these preparations as resuscitating agents or as food in any direct sense. As he truly says:—

**"Were it possible to furnish the market at a reasonable price with a preparation of Meat combining in itself the albuminous, together with the extractive principles, such a preparation would have to be preferred to the Extractum Carnis, for it would contain ALL the nutritive constituents of Meat." Again:—"I have before stated that in preparing the Extract of Meat the albuminous principles remain in the residue; they are lost to nutrition, and this is certainly a great disadvantage."**

The Albumen and Fibrine are the only nourishing portions of the Beef, and they are not present in Meat Extracts, &c., which, therefore, are only stimulants and no more nourish the system than the poker feeds the fire.

Bovril supplies the nourishment so conspicuously absent in these preparations, and this is secured by the introduction of albumen and fibrine (or rather the entire lean of beef) desiccated at a low temperature by special process, and subsequently pulverised to a minute degree of subdivision. By this means the entire nourishment of animal food is adapted to the feeblest and most sensitive system, and perfect assimilation is secured with the least possible expenditure of vital energy.

## INVALID BOVRIL

is specially prepared for use in the sick-room, and is put up in porcelain jars, obtainable from chemists and druggists only.

It contains the entire nutritive and stimulative constituents of Prime Ox Beef, and differs from ordinary Bovril in being more concentrated and quite devoid of seasoning, solving the great difficulty which all medical men recognise of furnishing substantial nourishment to the system through a debilitated stomach, nature being so effectively assisted that perfect digestion and assimilation is certain.

Strength to sustain the patient through the crisis of the illness, and strength to carry the invalid to a speedy convalescence and recovery is all important, and Bovril (which is not merely an Extract of Meat but Meat ITSELF) furnishes the system with renewed strength and increased vitality, being relished and retained when ordinary foods are rejected.

**BOVRIL, Ltd., Food Specialists, LONDON.**

DIRECTORS—The Right Hon. LORD PLAYFAIR, G.C.B., LL.D., DR. FARQUHARSON, M.P., and others.

BRANCHES AT—Birmingham, Manchester, Liverpool, Newcastle, Hull, Leeds, Edinburgh, Glasgow, Dublin, and Brussels.  
AGENCIES AT—Sheffield, Northampton, Derby, New York, Paris, Christiania, Karlsruhe, Stockholm, Lausanne, Rotterdam, Madrid, Seville, Sydney, Athens, Melbourne, Adelaide, Brisbane, Albany, Perth (W.A.), Christchurch (N.Z.), Port Elizabeth, Shanghai, Bombay, Singapore, Calcutta, Valparaiso, &c.















